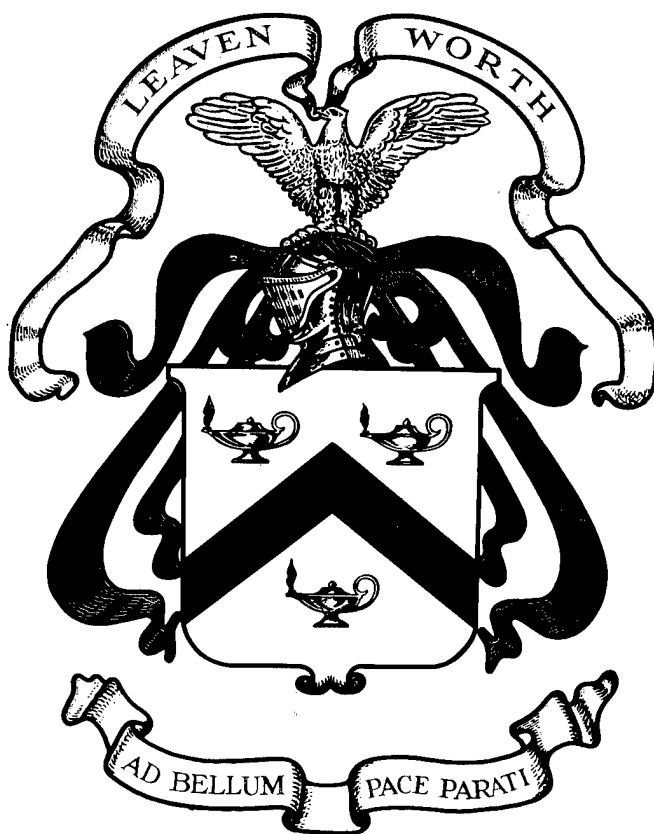


39th Military Librarians Workshop

"Information Warfare: Librarians on the Frontline"



9 - 12 October 1995
Combined Arms Research Library
Fort Leavenworth, Kansas

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Information Warfare: Librarians on the Frontline

**Proceedings of the 39th Annual
Military Librarian's
Workshop**

Elaine McConnell & Stephen Brown, editors

**9-12 October 1995
Combined Arms Research Library
Fort Leavenworth, Kansas**

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 30 October 1996	3. REPORT TYPE AND DATES COVERED Conference Proceedings- Final
4. TITLE AND SUBTITLE Information warfare: librarians on the frontline: Proceedings of the Thirty-Ninth Military Librarian's Workshop, 9-12 October 1995			5. FUNDING NUMBERS
6. AUTHOR(S) Elaine McConnell Stephen Brown, editors			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USACGSC Combined Arms Research Library USACGSC/CARL 250 Gibbon Avenue Fort Leavenworth, KS 66027-2314			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE A1
13. ABSTRACT (Maximum 200 words) The Thirty-Ninth Annual Military Librarians Workshop was held in Kansas City Missouri and Fort Leavenworth, Kansas, October 9-12 1995. The conference entitled "Information Warfare: Librarians on the Frontline" was hosted by the Combined Arms Research Library. The focus was electronic and information security. Presentations included "Copyrights and Electronic Media", the Army Knowledge Network, the JANUS training system. "Librarians in the Information Age" and "Information Warfare: Netsurfing and Military Secrets"			
Subject terms (25 field) Military Librarians Workshop (MLW), Military Libraries, Information Security, Information Warfare, Internet, WWW(World Wide Web), IW (Information Warfare), MLW (Military Librarians Workshop)			
14. SUBJECT TERMS Libraries, Copyrights, Information Systems, Networks, Military Research, Information Centers, Digital Systems, Integrated Systems, Technology Forecasting, Missouri, Kansas, Information Sciences			15. NUMBER OF PAGES 197 p.
17. SECURITY CLASSIFICATION OF REPORT unclassified			16. PRICE CODE
18. SECURITY CLASSIFICATION OF THIS PAGE unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT unclassified	20. LIMITATION OF ABSTRACT unlimited	

DTIC QUALITY INSPECTED 2

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FOREWORD

The Thirty-Ninth Military Librarians Workshop (MLW) was an exciting opportunity to exchange information with our peers, get update information, and, most importantly, get a good look at how the world of libraries and information is changing.

There were a variety of excellent speakers who provided fascinating and highly useful information. The keynote speakers, Winn Schwartau and Robert Steele, addressed the workshop theme of "Information Warfare: Librarians on the Frontline" directly and in detail, and were the hit of the workshop.

The pace of change in our profession has seldom been faster or more challenging. MLW has become more than a professional development tool, it is a lifeline to critically needed information and insight on the direction of information access, tools and technology.

Thanks are due to so many people who helped make the 39th MLW a success; notably the staff of the Combined Arms Research Library who have a service orientation that is unequalled. They not only showed the welcome and helpful attitude they are well known for, but took on other planning and analytical tasks just as easily and quickly.

Our thanks to the speakers is both genuine and essential. Their insights on future trends will help us all be better prepared for the new developments that will impact our activities.

Last, but certainly not least, we want to thank the participants who made the workshop the memorable event it was, and who freely shared their experiences and thoughts in order to help others.



MARTHA A. DAVIS, Director
Combined Arms Research Library

Information Warfare

- New Paradigms for Conflict
 - Winn Schwartau
 - Interpact, Inc.
 - 11511 Pine St.\ Seminole, FL 34642
 - V: 813.393.6600 \ F: 813.393.6361
- » Email: Winn@Infowar.Com

Information Warfare Is

- The use of information and information systems as either offensive or defensive weapons against other information and information systems.
- The Migration of Conflict To The Commercial Sector
- Replaces Conventional Warfare
- No longer necessary for a military conflict
- Prelude to Conflict
- Lethality Reduction
- We Won World War III
- What About World War IV?

Information Warfare

- Military can be effectively bypassed
- Anyone can wage it
- Replaced with a financial conflict
- A much more even ground
 - » Haves versus Have Notes
- Capable now through Open Sources
 - » No More Secrets

New World Order of Economic Competitiveness

- Three Spheres of influence with differing approaches to capitalism
 - » North America
 - » Europe
 - » Far East
- Military Allies
- Where is the Balance?
- What are the rules
- Is there an even playing field?

Computers Everywhere and the Global Network

- Modern society relies upon technology
 - » Finance: Corp/Personal
 - » Transportation
 - » Power Distribution
 - » Health
 - » Communications
 - » Complexity Breeds Vulnerability

Wall Street alone spent \$40B in the 1980's

- \$7.5B in 1991
- 190 Million PC's world-wide
- 25-40 Million more every year
- \$150B in MIS HW, SW and Services
- Only 1% to protect

Econo-Technical Crime

- Common in 1980's
- Epidemic in 1990's +
- \$100-\$300B
 - » Fraud
 - » Cellular Fraud
 - » Tel-abuse
 - » Going for the \$\$\$
- Credit Card
- Citibank
- Copyright Infringement
- Reverse Engineering

Class I: Personal Information Warfare

- In Cyberspace: Guilty Until Proven Innocent
 - » Personal Attacks
 - » The Digital 'You'
 - » Data bases
 - » Credit Cards
 - » Police, Travel, etc.
- How Can you trust the numbers? Banks, etc.
- Data Bases
- Communications
- Scientology: Class I War
-

Class II: Corporate Information Warfare

- The current lack of US policy actually encourages Industrial and Economic Espionage
 - » Economic Espionage
 - » Corporate Spying
 - » Nation-state sponsorships
- Japanese Motto: "Business is War"
- US Motto: "Tread On Me."

Espionage isn't Just the Rosenbergs

- Ind Esp Up > 300-400% (1985-1990) FBI
- FBI Caseload up 500%
- 122 Countries have computer espionage programs
- Growth > 142% Year (MI902)
- Cheaper/Faster to steal information than to invent technology
 - » Kodak - Fuji
 - » IBM - Hitachi
 - » Desault - Boeing
 - » Borland - Symantic
 - » GM - VW

Class III: Regional or Global Conflict

- Electronic Pearl Harbor
- Only Emerging Now
- Military Technology Migrates
- Old Soviet Technology/Stolen US Technology
- Political Power/Regional Power
- Economic Influence
- Domestic/Int'l. Terrorism
- Toulon Naval Base - France

Defensive Policy

- For decades we based have our defensive posture upon our adversaries capabilities, not their presumed intentions.
- The US Economy is a strategic national security asset
 - » Apply that same thinking to the New World Order
 - » Apply to trans-national (borderless) econo-technical infrastructure.
- What about the Commercial Sector?
- History:
 - » Communications is the key: camels, elephants, ships, harbors, telegraph, hi-speed anytime-anywhere.

Capabilities of the Information Warriors

- Open Source Intelligence
- What's available to me/us, is available to them
- US Educates the World
- Commercial Infrastructure weak, unsecure.
 - » Military requires commercial infrastructure
 - » Technology Proliferation
- Borders are meaningless
- Cost-effective
- Intentions come after capabilities

Information Weapons Goals

- Invisible
- Passive
- Insidious
- Effective
- Available
- Inexpensive
- Attack the Fundamentals
 - » Integrity
 - » Confidentiality
 - » Denial of Service (Availability)

Weapons for the Information Warrior

- Data Bankers
- Hacking
- Public Records
- Social Engineering
- Social Malaises
 - » Binary Schizophrenia
 - » Approximation Anxiety
 - » Digital Addiction
 - » Information Overload

More Weapons for the Information Warrior

- Malicious Software -
 - » Bots
 - » Viruses
 - » Trojan Horses
- Cost: \$1-5 Billion/Yr.
- Software is inherently error-prone
 - » Bank of New York
 - » Goedel's Theorem
- Exploit the weaknesses

Malicious Hardware - Chipping

- Recent
- Viruses/Malicious Software in Silicon
- Keyboard
- BIOS
- Iraqi Virus Hoax
- Complex circuitry error-prone (Pentium)

Hacking

- 85-97% of all attacks go undetected
- DISA Tiger Teams over Two Years
 - » Almost 9,000 tests
 - » 87% successful
 - » Of those, 5% detected (~300)
 - » Of those, only 5% reported (22)
- For every attack we know of, 399 more occurred.
- Military Intelligences says 1 in 1000!

Hacking as National Resource

- Amoral Sociopathic Scum
- Early Warning Radar System for Cyberspace
- Voyeurism: Purism
 - » Hackers who don't grow up
 - » The Curious
 - » Counter-Culture of the 1990's
 - Remember the 60's!
- Hackers Aren't So Bad
 - » Served as Early Warning System for Cyberspace
- "Hackers are a national resource to be cultivated, not persecuted."
 - Robert Steele

More Hacking

- Password Vulnerabilities
- Professional Hacking
- Project Rahab: Germany
- Israel, S. Korea, Taiwan, France, etc.
- Social Engineering
 - » Asking the right questions
 - » Masquerading
 - » Dumpster Diving
- Mis/Dis Information

Sniffing the Net

- Headlines in Media
 - » Internet Sniffing
 - » Freeware
 - » Test Equipment
 - » Root access
 - » Spoofing
 - » Password Compromise
- Interception/Eavesdropping
 - » Voice
 - » FAX
 - » Satellite

Electromagnetic Eavesdropping

- Tempest Busting
 - » Computers Leak Information
 - » Monitor
 - » Cables (As antennae)
 - » Video Boards
- History
 - » Van Eck 1985
 - » BBC 1989
 - » Moeller 1990
 - » Geraldo 1991
 - » No. CA Chemical Co. 1990
 - » Chemical Bank 1993

Interception

- Insidious/Invisible/Passive
 - » Conventional Antennae/Log Periodic with Gain
 - » Power Lines
 - » Ground Signals
- Home Brew' for less than \$50
 - » Black and White TV
 - » Alter H-Sync Circuits
- Similar for Keyboards at 600-900 MHz
- Video Reconstruction
- It's open source material now
- Filter with FFT

Denial of Service

- Cut off the money supply
 - » To Businesses
 - » Individuals
 - » Internationally
- Shut down major communications carriers
- Transportation systems
- Power distribution
- Wide Spread Systemic Attacks
 - » Civilian Government
 - » IRS
 - » Unclassified Military

Why worry about Denial of Service?

- Confidentiality and Integrity Solved
 - » Virus and WORM Events
- Who ever thought . . .
- Apply to Future
- Double Whammy
 - » World Trade Center - 1993
 - » No-name Storm of 1993
- Disaster Recovery
 - » “We have the Acts of God thing down. What about the Acts of Man?”
- Winn

Large Scale DOS Events of Note

- Newark Airport
 - » Power and backup power in same conduits
 - » 24 Hour collapse & world-wide
- Air Traffic Controls
 - » New York Airports -All 3 closed by fire in phone switch
 - » 17 major events since Jan 1995
- Telephone Companies
 - » 1990
 - » 1991
- Alleged Financial Attacks
 - » 41 in Europe and US

No Assumptions, Please

- Hacking Curves 1970 -1995
- Virus Curves 1980 - 1995
- What Reason Do We Have To Think We Can Wish It Away

Nuclear Weapons of the Information Age

- Highly Classified
- HERF Guns
 - » High Energy Radio Frequency
- EPC
 - » Electromagnetic Pulse Cannons
- EMP/T Bombs
 - » Electromagnetic Pulse Transformer Bombs
- HPM
 - » High Power Microwave
- Chaos= Wide Spread Deployment and Use Without controls.

Magnetic Weapons

- Static on the radio
 - » Cellular phone interference
 - » Laptops on Airplanes
 - » CB's from the 1970's
 - » Trash-80/VIC-20 and TV's in the early 1980's
 - » Wheel chairs, hospital equipment
 - » Low level sensitivity
- What happens if we turn up the volume . . . real loud?
- Non-lethal?
 - » Collateral Biological Damage

HERF and HPM

- High Energy Radio Frequency
 - » Causes Systems Interference
 - » Component/Systems Collapse
- Low-Medium Penetration Factor
- Directional/Wide-Spread
 - » Portable
- Collateral Physical Damage Minimal
 - » Biological Damage Likely
- Uses Available technology

Electromagnetic Pulse Cannons

- Higher Power
- Military
 - » Alleged Use in Gulf War
- Power Disruption

EMP/T Bombs

- Wide Spread Effects
- Massive Systemic Disruptions
- Communications, Power, Radio Traffic,
- Malfunctions appear "HERF-like"
- Magnetic Storage Devices Erased
- Potential Silicon Melt-Down
- High Collateral Damage
- Biological Impact Can Be Severe

HERF Guns and EMP/T Bombs

- "Likely terrorist targets are key financial centers such as Wall Street in New York, the city district in London or the Paradeplatz in Zurich. This would cause incalculable damage to computer hardware and software associated with stock and commodities markets, banking, international currency exchanges and pension funds. Rebuilding computer systems and restoring software databases from paper records would doubtless take many months."

●
James Rawles, "Defense Electronics"

Who Are the Information Warriors?

- Information Brokers
 - » Private Investigators
 - » Mail Order Houses
 - » List Brokers
 - » Public Records
 - » The
- Spy Shops
- Bug Trackers

Who Are More of the Information Warriors?

- Ex-Bloc Agents
 - » Hacking
 - » Access to the Tools
- Competitive Companies
- Competitive Nation-States
- Organized Crime
 - » Get people inside: Low paid employees: Guards and Cleaning
- Amateur & Professional Hackers

More Information Warriors

- Common Thieves
 - » Use high-tech tools
- Employees
 - » Have access to the goodies
- Mercenaries
- Terrorists
- Crazyies
- "If I can't have it, neither can you," adherents.
 - » 3rd. World
 - » Sickos

More Motivation

- Neo-Luddites
- Mis/Dis-Information
 - » Political/Social/Religious Agendas
- Greed/Financial Gain
- The Company Man/Woman
- Nationalism
- 'Higher Power' (Religion)
- Distraction (The Double Whammy)
- Scare the Public (Insidious/Invisible Attacks)
- Terrorism

US Based Terrorism

- Chicago O'Hare airport rocket launchers
- World Trade Center
- Poison Water Supply - North East
- Cuban efforts in South Florida
- World Trade Center (and more in NY)
- Oklahoma City
- Unabomber
- The Militia?
- Why would they NOT use Information Weapons?

When Will We React?

- Apathy and Arrogance
- Electronic Pearl Harbor?
- Computer Chernobyl
- The Lawyers Are Coming
- Congress Privacy Compromised
- Security By Obscurity 'Busted'
- When More Military Technology Reaches the Streets
- Frog in the Frying Pan

The Future has to Happen

- Chinese Proverb: IF we don't change direction, we'll end up where we're going.
- hacking, Viruses, New technologies, Migration from Mil to Comm.
- The Frog in the frying pan

Cyber-Aware World

- Internet Connections: 45 Million people, 3.4 Million hosts,
- More Coming
- 250 Hack attempts daily at Pentagon
- Millions of hacks yearly
- Education/Awareness

Defensive Measures

- Think like the Bad Guys
 - » What would they do?
 - » How would they do it?
 - » Why?
- Open Source Evaluations
- Testing
- No more security by obscurity
- Military Vulnerability
 - » Class vs. Unclass
 - » Attack unclass support structure
- Export Control As an Information Weapon

National Information Policy

- A Constitution for Cyberspace
- Electronic Bill of Rights
 - » What is Information?
 - » Information Evaluation
 - » Who Owns Information?
- American Cyber-Borders
- Federal/State Cyber-Borders
- Who Should Run the NII?
- Information As Strategic Asset
- Should We Spy On the World?
- Establishing Privacy

What is War?

- Military Defend US Commercial Interests?

» “I’ll give up my life for my country, but not for GM.”

- What constitutes an attack?
- What are proper responses?
- Who matters?
- Who decides?
- Where is the policy and leadership?

Your Role As Librarians

- Create open source paths
- Use the Internet
 - » Search
 - » Post
 - » Ask
- Synergy
- New Solutions - No Dead Whales
- Right in the Middle of It

Closing

- Future Thinking
- New Paradigms
- Is the economy a strategic asset of the US?
- Do We Have the Desire to Maintain World Leadership?
- Do We have the will to make our dreams a reality?
- Do want to even the global playing field competitively

Is US Economy and the Private Sector A Strategic or National Security Asset

- If NO - let's go home right now!
- If Yes, let's put a new spin on our thinking and get everyone onto the same team.

OSS, Inc.

OPEN SOURCE SOLUTIONS, Inc.
International Public Information Clearinghouse

39th Military Intelligence Librarians Workshop
Information Warfare: Librarians on the Frontlines

MILITARY LIBRARIANS IN THE AGE OF INFORMATION: WARRIORS OR WALLFLOWERS?

Mr. Robert D. Steele, Chairman & CEO
OPEN SOURCE SOLUTIONS Group

10 October 1995

Open Source Intelligence--Background

Preamble

GRRRRR or Whimper?

Technical Revolution Mistake #1: Librarians Missed the Boat

Technical Revolution Mistake #2: Users Got Cocky, Face Value

Technical Revolution Mistake #3: Librarians as Archivists

Technical Revolution Mistake #4: Static Indexing vs. Delta Force

Introduction

Open source roots (OSS, CIA); Copeland anecdote

USMC Intelligence Center, lessons learned about OSINT

SOUTHCOM and DOE, lessons learned about OSINT and drugs

CIA Training, lessons learned about OSINT and consumers

Joe Nye's Jig-Saw Puzzle: OSINT in perspective

OSINT is the foundation for reinventing classified disciplines

The Challenge of Change: Five Revolutions

Changing Threat--Four Warrior Classes

Changing Demands--Law enforcement, citizens as consumers

Changing Fiscal Options--fewer people, fewer dollars

Changing Knowledge Terrain--private sector intelligence

Changing Technology--creating a virtual intelligence community

Global Knowledge Terrain--Context for Digital Battle

- Nine Sectors of the Information Continuum (Digital Ammo)
 - Schools, Universities, Libraries

11005 Langton Arms Court, Oakton, Virginia 22124-1807

Voice: (703) 242-1700 - Facsimile: (703) 242-1711

Internet: <oss@oss.net>

- Businesses, Private Investigators/Information Brokers
- Media, Government, Military, Intelligence
- Five Information Battle Areas
 - Political-Legal; Socio-Economic; Ideo-Cultural
 - Techno-Demographic; Natural-Geographic
- Distributed versus Central Intelligence
- Civil versus Military Sourcing
- Just in Time versus Just in Case Operations

ACCESS: Intelligence in the Age of Information

Data, Information, Intelligence: Emphasis on OSINT
 Achieves Savings, Satisfies Broader Range of Requirements
 Enables Clandestine and Technical Focus on Hard Targets

Secrecy Paradigm is Counterproductive--Quick Open Access is Key
 Information = Content + Context + Time
 Obtain Information Before It is Classified Secret
 Security through Speed and Obscurity

Distributed Collection and Filtering is Critical--
 Human Filtering, Leveraging External Overhead Essential
 Analyst as Manager of Network of Overt Sources
 Analyst as Manager of Private Sector Outsourcing
 Analyst as "Recruiter/Handler" of Consumers

Vulnerabilities in Both Government and Industry
 Data Integrity, Availability, Security
 Cost of Uninformed Decisions

National Intelligence--The Virtual Intelligence Community

OSCINT as Foundation
 Librarians as Intelligence Officers
Consolidated Functional Management of Resources
 Cross-Walks from libraries to satellites
National Intelligence Agency
 Distributed Networks of overt experts
Clandestine Services Agency
 Out of the Embassies, Tactical Analysis Teams Inside
National Mapping & Imagery Agency

Who helps the commander get commercial imagery?
National Security Agency
 Who does data mining on the Internet?
Joint National Military Intelligence Command
 Where is line between librarians and classified custodians?
 Who manages allied burden sharing of unclassified?
Electronic Security & Counterintelligence Program
 What are operational security implications of open source?

What *Is* Information Warfare?

- War by other means--unconventional in every way
- Not just about destroying bytes--
 must create and deliver *intelligence*
- No dominated by military--center of gravity is civil
- Classifying the electronic threat is a threat
 of itself--not actionable in civil sector
- Civil sector/electronic civil defense CRITICAL--
 we don't spend a penny
- Foreign unclassified data including commercial
 imagery CRITICAL--we don't spend a nickle
- SEW and Offensive IW are equivalent of horses
 wearing roller skates. J-6 has the idea
 (sanctuary lost) but services are not playing
- DoD is not well prepared for war *or* peace
 in the 21st Century

A Strategy for Victory

- Four elements to a national information strategy
 - Connectivity, Content, Coordination, C4 Security
- Administration rolling on connectivity
- Content has no constituency
 - National information foundation
 - DTIC, NTIS, FRD, NASA
- Coordination being addressed by Senator Cohen
- C4 Security is the Achilles heel of the Nation

Commercial/Military Fiscal Implications

- Electronic civil defense is number one priority
- Purple systems are now CIVIL-military dual use
- "Safe C4" is a civic and soon a legal obligation
- Source and Consumer of Data will define system needs

- Multi-media self-licking ice cream cones are useless
- Man-portable and civil-disguisable systems best
- Intelligence is making a comeback--TIARA implications
- Open sources (including imagery/signals) a growth area

Wild Cards Abound

- Sanctuary Lost
- Government(s) versus Militia(s) versus Crime Lord(s)
- Environment Catastrophe (Sea Level, Disease, Temperature)
- Alternative Realities--Mental Warfare in the 21st Century

Conclusion: Making the Great Revolution

Redefining Our Premises and Our Government

National Security (Arlington Institute)
 National Competitiveness (National Economic Council)
 Domestic versus Foreign, Public versus Private
 Data, Information, and Intelligence: Defining the "Smart Nation"
 The Community Tomorrow
 Classified Intelligence, Effective Government Information
 Harnessing the Distributed Intelligence of the Private Sector
 Smart Nation Creating New Knowledge = National Intelligence

FROM THE WAR DEPARTMENT TO THE WHITE HOUSE: A LIBRARY LEGACY

I am delighted to be here with you today. It has been about 8 1/2 months since I left the Department of the Army for the White House complex but I still feel a strong tie to the Department of Defense. It is also good to be back in Kansas City and to have the opportunity to once again work with the staff of The Command and General Staff College Library at Fort Leavenworth. It was at the Command and General Staff College Bell Hall Library, at Fort Leavenworth, that I began my appropriated fund service with the Federal government, quite a few years ago.

In my presentation today, I will point out several institutional relationships that have existed over the last century between the libraries of the Department of Defense and the White House.

Organizationally, our Library and Research Services Division is located within the Office of Administration of the Executive Office of the President. The Office of Administration is responsible for providing the basic infrastructure for operations (Facilities Management, Financial Management, General Services (mail, procurement, publishing, supply, publishing & graphics, messenger service), Information Systems and Technology, Personnel Management, and Library and Research Services. Library and Research Services Division is composed of The Office of the Director, a centralized Technical Services Branch, three physically separate libraries, and the Executive Office of the President Publications Office.

The three libraries within the White House complex serve all staff members of the White House complex. One of the libraries is located in the New Executive Office Building and two libraries are in the Old Executive Office Building.

The New Executive Office Building Library, originally established to serve the Bureau of the Budget and subsequently the Office of Management and Budget occupies over 4,000 square feet of space in a modern structure whose design and

A LIBRARY LEGACY

construction spanned the years 1963-1965 during the Kennedy and Johnson administrations. Actual construction took 20 months and the building was dedicated by President Lyndon Johnson in 1965.

This library focuses primarily on economics, the Federal budget, trade, and other areas relating to the management of the Federal government. Among its specialized holdings are copies of The Budget of the U.S. Government from 1923 to the present.

As I mentioned earlier, the other two libraries are in the Old Executive Office Building as it is now called. In 1871 Alfred Mullett was commissioned to design the new State, War, and Navy Building that was to be built on the West side of the White House to accommodate the growing staffs of the State, War, and Navy Departments. Ground was broken on June 21, 1871 during the administration of Ulysses Grant. The building, which would be completed in sections, would eventually have 4 1/2 ' thick walls, six floors with about two miles of corridor, 553 rooms, 1,572 windows, and 1,314 interior doors. It is perhaps one of the finest examples of French Second Empire architecture in this country. When completed in 1888 during the administration of Grover Cleveland it was the largest office building in Washington. It has been home to 25 Secretaries of State, 21 Secretaries of War, and 15 Secretaries of the Navy. Five Presidents have worked in the OEOB and all Vice Presidents from Lyndon Johnson through Albert Gore have had offices in the OEOB.

The State Department's south wing was completed in 1875 and was the first wing to be occupied, with its elegant Diplomatic Reception Room, the Secretary of State's Office and the Department's elegant four-story library which became the White House Reference Library (now called the OEOB Library). The library consists of a large open space with four levels of recessed book stacks, and three sets of balconies. All of the library fittings are of pearl and gold cast iron. The ceiling is highlighted by Greek decorations in gold paint that surround the glass sections of an ornamental skylight. An even more striking feature of the library is its beautiful Minton tile floor—one of three such floors in

A LIBRARY LEGACY

the Old Executive Office Building. The old State Department Library ranks among the more important interiors for historical as well as aesthetic reasons. Originally the room was the home of such important documents as the Declaration of Independence and the Constitution (facsimiles of the originals were actually on display) both of which were later transferred to the National Archives. Presidential artifacts were also on display, including George Washington's sword, the desk upon which Thomas Jefferson wrote the Declaration of Independence, and Benjamin Franklin's walking stick (all now in the Smithsonian.) This room was described in many Washington guidebooks of the day as one of the most beautiful in Washington.

This library concentrates its collection on a wide variety of subjects, with emphasis in areas such as the Presidency, American history and politics, government policy, the military, and national security.

The Navy Department moved into the east wing in 1879 with its elegant wall and ceiling stenciling and floors. Unquestionably the finest room in the east wing is the former Navy Library Reception Room. It was intended to be a space for entertaining and consequently no expense was spared on its construction. More money was spent per square foot on the Navy Library Reception Room than on any other room in the building because of its rich marble wall panels, 800 pound bronze sconces, and gold leaf ornamentation. The books were housed in the adjoining alcoves. Shortly after the Navy Department moved out of the building in 1918, the room became known as the Indian Treaty Room. No historical basis for this designation has been identified despite extensive research.

The room no longer houses a library but is used for Presidential News Conferences and receptions.

The remaining north, west, and center wings of the building were constructed for the War Department, took an additional 10 years to construct, and were completed in 1888. Among the interiors of interest in the West wing is the War Department Library, now the White House Law Library. The basic plan is similar to the former State Department Library in the south wing -- that is

A LIBRARY LEGACY

a principal level with Minton tile floor, ornamental cast iron balconies of book stacks and an ornamental sky light. The current White House Law Library collection emphasizes administrative and Federal case law.

As the departments that occupied the State, War, and Navy Department Building grew in size, they vacated the building for more spacious quarters (but perhaps not more elegant quarters.) I'll let you be the judge of that. The Navy department was the first to vacate and they did so in 1918. The War Department left in 1938, and the State Department left in 1947. In 1949, the building was renamed The Executive Office Building and then, upon construction of the New Executive Office Building, it became known as the Old Executive Office Building.

Materials in all three EOP libraries are in a variety of formats. In addition to the traditional monographs (approximately 65,000) and journals (approximately 1,000 subscriptions), we have collections on microfilm and microfiche, and a splendid offering of CD-ROM holdings (Statistical Masterfile, Congressional Masterfile 1 and 2, Econlit, Federal Register, Polling the Nation, National Trade Databank, Code of Federal Regulations, U.S. Code, Facts on File News Digest, and numerous other titles.) The combined holdings of our libraries are contained in our new integrated library system. The online public access catalog may be accessed from all of the libraries and library offices.

All libraries offer online database research services. Among our current online offerings are Lexis-Nexis, CQ's Washington Alert, Datatimes, Burrelle's Broadcast Database, DIALOG, Westlaw, and OCLC.

During the past few months, the Web browser Netscape was installed on the PC of each reference librarian in all EOP libraries. This provides access to the Internet via the World Wide Web. GPO Access along with Adobe Acrobat Reader software is currently being installed on each reference librarian's PC. This will permit librarians and customers to view and print facsimile versions of Congressional documents. Security is a major concern within the White House

A LIBRARY LEGACY

network and a great deal of study and research goes into each request for a new internet service.

The White House Home page is now available on the World Wide Web. The Home Page offers users the opportunity to search almost 5,000 selected White House speeches, briefings, letters, and reports. The holdings are updated daily. For those of you who have not viewed the Home Page, you can even see and hear from Socks, the first cat. Address is: www.whitehouse.gov.

The White House internal network enables us to publish and distribute our monthly new acquisitions list electronically on the "Bulletin Board" feature. Lists remain posted to the Bulletin Board for three months. We also maintain locations, hours, telephone numbers for each of the libraries on the Bulletin Board, as well as an up-to-date listing of CD-ROM products that are available in our libraries.

Currently, neither our patron online catalog nor our CD-ROM collection is available on the recently installed White House internal network. Our future goals include implementation of both of these capabilities as well as the development of an internal EOP Libraries Home Page.

In addition to the Director's Office, three libraries and the centralized Technical Services Department, the Library and Research Services Division is responsible for operation of the Executive Office of the President Publications Office. The Publications Office is responsible for the acquisition and dissemination of all White House and EOP documents including White House press releases, Executive Orders, Presidential Speeches, radio addresses; Proclamations; EOP Circulars, bulletins, memos and forms, Office of Science and Technology Policy publications, Office of National Drug Control Policy publications, etc. The EOP Publications Office also accepts requests from staff and the general public for hard copy publications. In order to more expeditiously handle requests for publications under 30 pages, we have installed a Fax-on-Demand system which electronically transmits stored White House and OMB documents via FAX to both the domestic and foreign press corps; Federal, state,

A LIBRARY LEGACY

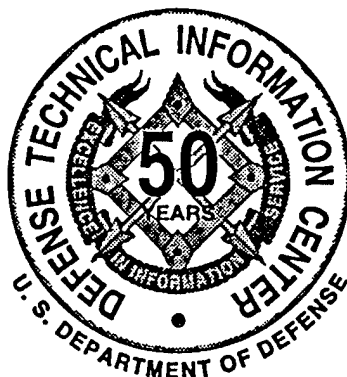
and local government agencies, foreign embassy personnel, the White House staff and the general public. This highly automated system provides immediate information access for the global community 24 hours per day, 7 days per week.

White House documents are maintained on the system for about six months. However, we maintain all Executive Orders, State of the Union Speeches and biographies of the four principals throughout the tenure of the Administration. The Fax-on-Demand system can be accessed from the keypad of a fax machine or from a touchtone telephone. An index of currently available releases may also be requested. The caller inputs their own fax number into the system and releases are faxed out within minutes. The Faxline number for White House Publications is (202) 395-9088. The Faxline number for OMB Circulars and, very shortly, OMB Forms is (202) 395-9068.

This then is an overview of library operations in the White House community. It is a very challenging and exciting library system and a marvelous environment in which to work. It is also a location rich in history and, as you have seen, one that has ties to past library operations in what is now the Department of Defense and its components.

Defense Technical Information Center Briefing

Defense Technical Information Center



Ms. Cheryl Hunter

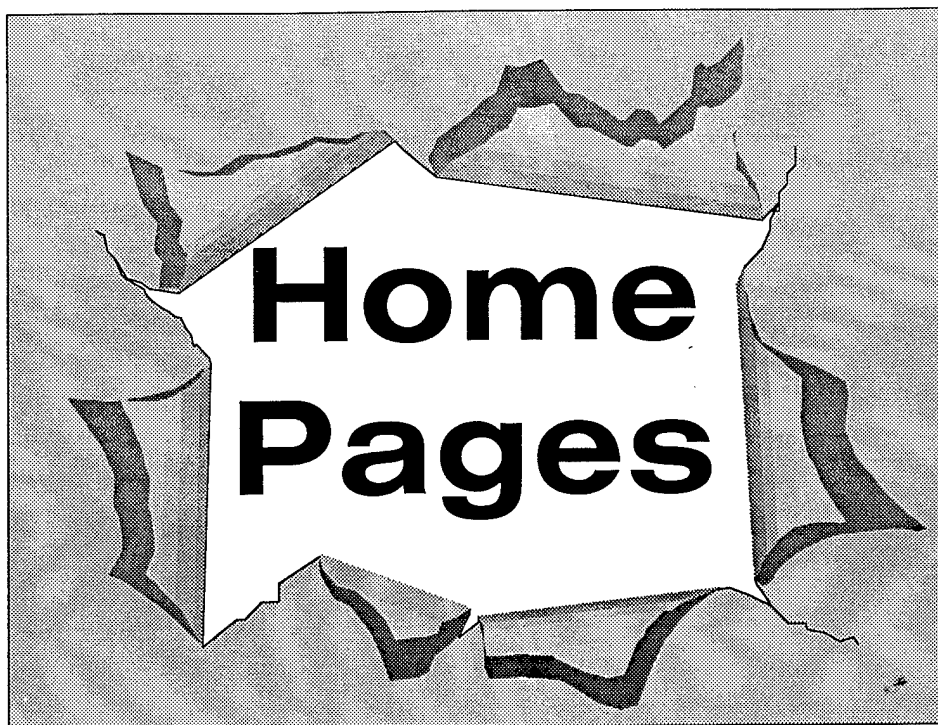
**Chief, Special Programs Branch
Directorate of User Services**

Enhanced TR Database on CD-ROM


DTIC
U.S. Department of Defense

- ▼ Easy to use
- ▼ Available as a Subscription
- ▼ Contains citations to pre-1970 accessions
- ▼ Full-text default searching
- ▼ Full-text proximity searching on abstract & title field
- ▼ Bookmark citations

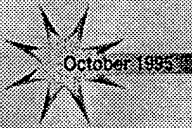
Defense Technical Information Center Briefing



DTIC Home Page



Defense
Technical
Information
Center (DTIC)



[About DTIC](#) | [What's New at DTIC](#) | [DTIW](#) | [Gopher](#) | [anonftp](#) | [DTIC Organization](#)

Welcome to the Defense Technical Information Center (DTIC) Home Page. This Home Page is under continuous review and revision. Please use our [comment form](#) if you have ideas about information to be put on the web that you feel would be useful. This is a U.S. Government Computer System, read [this warning](#).

DTIC is a major component of the DoD Scientific and Technical Information Program (STIP) within the Office of the Under Secretary of Defense for Acquisition and Technology (OUSD(AT)) and reports directly to the Director Defense Research and Engineering (DDRE&E).

DTIC contributes to the management and conduct of Defense research, development and acquisition efforts. This is done by providing access to and transfer of scientific and technical information for DoD personnel, DoD contractors and potential contractors, and other U.S. Government agency personnel and their contractors. DTIC's Administrator is Kurt Melhahn. DTIC's Deputy Administrator is R. Paul Ryan.

Organizations registered with DTIC are considered members of the DTIC Users Group. The DTIC Users Council is the governing body of the DTIC Users Group and represents the organizations registered with DTIC. It is empowered to act on behalf of the DTIC Users Group working with DTIC to address user concerns. Find out more about the [DTIC Users Council](#).

url: <http://www.dtic.dla.mil/>

10/6/95

Defense Technical Information Center Briefing

TR-GUI

DTiC
U.S. Department of Defense

You can:

- ▲ Search by Accession Data Range
- ▲ Search by Subject
- ▲ Build a Search
- ▲ Review a Search
- ▲ Select the Display Format
- ▲ Build a Custom Display Format
- ▲ Get Help Topics

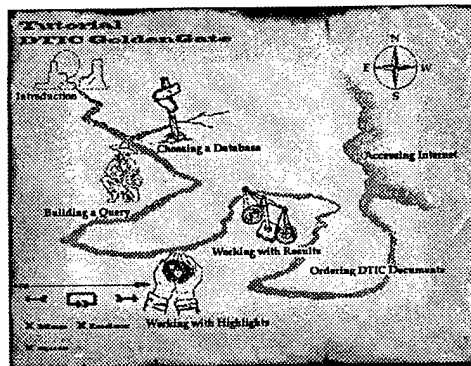
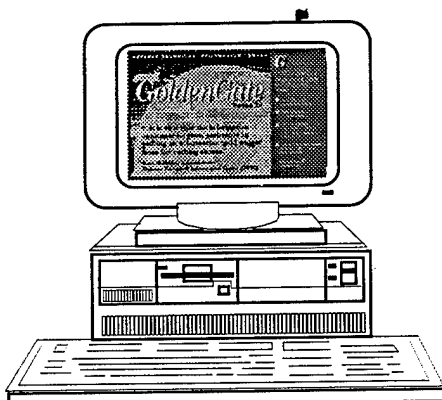


3

GoldenGate

DTiC
U.S. Department of Defense

Increasing user-friendliness and
information literacy

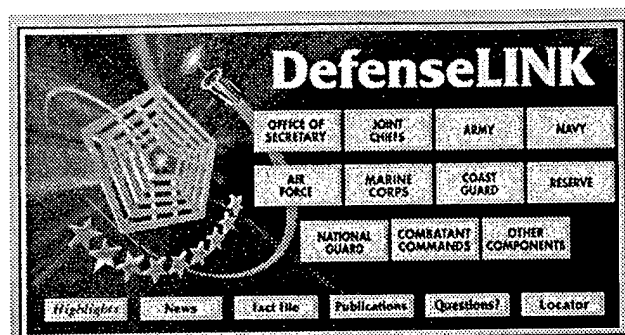


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10/6/95

Defense Technical Information Center Briefing

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Secretary of Defense William Perry would like to welcome you to DefenseLINK, the World-Wide Web Information Service from the Department of Defense.

The Department of Defense is responsible for providing the military forces needed to deter war and protect the security of our country. The department's headquarters is at the Pentagon.

Under the President, who is also Commander in Chief, the Secretary of Defense exercises the authority, direction, and control over the department, which includes:

- The Office of the Secretary
- The Joint Chiefs of Staff
- The Army
- The Navy
- The Air Force
- The Marine Corps
- The Coast Guard (in time of war)
- The Reserve
- The National Guard

url: <http://www.dtic.dla.mil/defenselink/>

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The image shows the top section of the GulfLINK website. It features the Department of Defense seal on the left and the title 'GulfLINK Persian Gulf War Illnesses Home Page' on the right. Below the title is a paragraph welcoming visitors to the website. This is followed by a section titled 'Persian Gulf War Illnesses Reports' which lists several reports. Below that is a section titled 'Recently Declassified Gulf War Documents' which provides information about the database and its contents. At the bottom is a URL.

Welcome to GulfLINK, the World Wide Web information system of the Persian Gulf War Veterans Illnesses Task Force. This service provides to the public information concerning the illnesses affecting Persian Gulf War veterans.

Persian Gulf War Illnesses Reports

The following reports provide background information and up-to-date research and analysis of the issues related to illnesses affecting Persian Gulf War veterans:

- Defense Science Board Task Force Report: Persian Gulf War Health Effects, June 1994
- Comprehensive Clinical Evaluation Program (CCEP) for Gulf War Veterans, August 1997
- Clinical Evaluation Program for Gulf War Veterans
- Unexplained Illnesses Among Desert Storm Veterans
- Federal Agencies Related to the Health of Persian Gulf Veterans, Dept. of Veterans Affairs, March 1995

Recently Declassified Gulf War Documents

The documents in GulfLINK are recently declassified documents with potential relevance to the Persian Gulf War veterans' illnesses. Updates to the GulfLINK system will be made as more information is made available.

As you search or browse the documents in this database, you should be aware that many of the documents are from foreign countries (e.g., captured Iraqi documents), reports on what foreign

url: <http://www.dtic.dla.mil/gulflink>

Defense Technical Information Center Briefing

DTIC DIGEST



DEFENSE TECHNICAL INFORMATION CENTER
DIGEST
Volume 95
Number 4

**Meeting the
Information
Needs of the DoD
Community**

DTIC '95

DTIC invites you to join us in celebrating 50 years of service to the defense community at the Annual Users Meeting and Training Conference from 30 October-2 November 1995. You will find stimulating sessions, tours and exhibits which have been planned to make this conference a very special event.

Attend an instructor-led DROLS overview, seminars on standard general classification language (GCL), a forum designed to introduce our products and services to new or potential users. These are some of the activities scheduled for Monday, 30 October. Tours of the Library of Congress Digital Library and the Pentagon are also offered on this first day.

On Tuesday the conference will be formally opened by Dr. Lenore Davis, Deputy Director, Defense Research and Engineering Office of Technology Transition, Dr. Anita Jones, Director, Defense Research and Engineering Office of the Undersecretary of Defense for Acquisitions and Technology, will then turn the conference over to the defense research community. The general session will also include a User Council report with instructions on how to use the council. During the day, discussion of current subjects of vital interest will be offered including Home Page policy, guidelines and design; MATRES innovations; and DTIC's new products, services and outreach efforts. You may choose to learn about DoD electronic publishing and dissemination or CD-ROM development and products available from DTIC. An opportunity to meet with User Council members and colleagues will be given as an open forum in the afternoon.

On Wednesday, Mr. Gary Voss, Principal Assistant Deputy Undersecretary of Defense (Environmental Security), will deliver the keynote address on environmental security issues at the general session. Later you can attend a presentation on the Government Informational Center System (GICS), an update on the products and services from the intelligence community, or a discussion of information security. Other topics of the day are the new military network, technology transfer, and security issues involved in electronic information dissemination. In the evening enjoy the reception and fed- and information exhibit where you will find good food and lively conversation in a relaxing atmosphere.

Thursday, the final day of the conference, is full of interesting information. Speakers will hold seminars on DTIC telecommunications services, copyright issues and indexing developments. Ammunition, featuring Mr. Robert Wolf, former Head, Captured German Documents at the National Archives and Records Administration, and a wrap-up session will complete the week's activities.

During the conference, be sure to visit the exhibit room where DTIC and IAC staff members will demonstrate, display, and discuss new and enhanced products and services.

Plan to participate in DTIC '95 and the ending program that has been prepared to commemorate DTIC's 50th anniversary. The conference will be held at the Sheraton Renaissance Hotel located in Crystal City, Arlington, VA. If you do not receive the announcement in the mail, you may use the form included in the Digest to register. The agenda is also available on the Internet. The address is <http://www.dtic.dla.mil/dtic/conference.html>.

Please contact Mr. Phila Pisoni, DTIC Special Programs Branch, at (703) 767-8222 or (800) 427-8222, for additional information concerning the conference.

STINET News

New Home Page developed by DTIC to assist users in obtaining Military Specifications and Standards.

In a joint effort with the Defense Printing Service Detachment Office (DPSDO), Philadelphia, DTIC developed the DPSDO Philadelphia Home Page on the World Wide Web.

The DPSDO Philadelphia Home Page currently allows users to order military specifications and standards and related documents online from the Department of Defense Single Stock Point for Specifications and Standards (DSSSP) and automatically establishes DoDSSSP accounts for new users. Current users can link to the ASSIST database, a management and research tool which indexes a military specifications and standards and related documents. I, starting now, users will be able to search portions of the ASSIST database on the DPSDO Philadelphia Home Page using the WAIS search/retrieval system. In the long term, DPSDO will offer electronic delivery of military specifications and standards.

DTIC and DPSDO Philadelphia hope this new service will be beneficial and we look forward to continuing to serve your information needs in the future. URL: <http://www.dtic.dla.mil/Specs>.

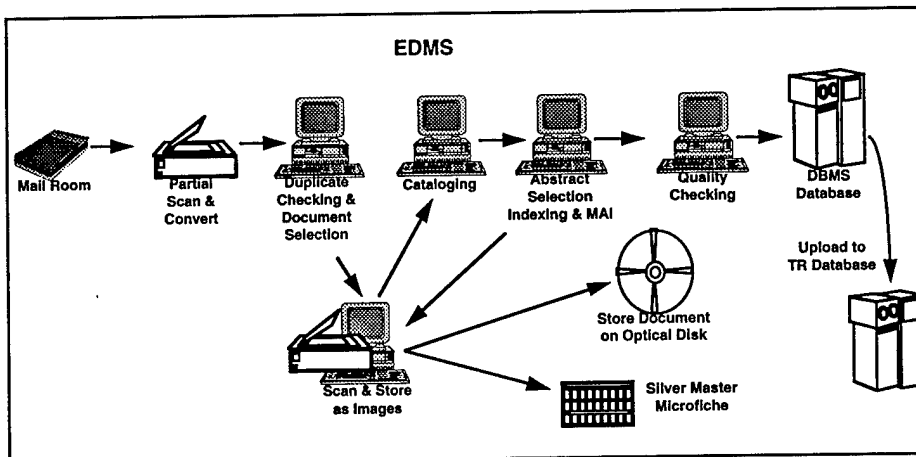
New features added to the STINET Service

The STINET Service added a new feature for searching databases using DTIC's customized WAIS. Abstracts to "Clear Search Term" were incorporated in July to give users the option to select the number of documents they wish to

url: <http://www.dtic.dla.mil:80/dtic/happenings.html>

Electronic Management System (EDMS)

DTIC
U.S. Department of Defense



10

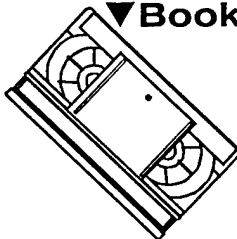
Defense Technical Information Center Briefing

DTIC's 50th Anniversary



▼ Video - Defense Technical Information Center: Fifty Years of Excellence in Information Service

- ▲ ADM 000 508 Open Caption
- ▲ ADM 000 509 No captions
- ▲ ADM 000 510 Closed Caption



▼ Book - To be published this fall



11

1995 Annual Users & Training Conference



- ▼ 30 Oct - 2 Nov 1995
- ▼ Stouffer Renaissance Hotel,
Crystal City, Alexandria, VA
- ▼ url: <http://www.dtic.dla.mil/dtic/conference.html>

12

Defense Technical Information Center Briefing

We've moved!

DTIC
U.S. Department of Defense



**Defense Technical Information Center
8725 John J. Kingman Road
Suite 0944
Ft. Belvoir, VA 22060-6218**

13

FEDLINK's Vision for the Future

(Talk by Susan M. Tarr, Executive Director, FLICC, 10/10/95)

The parent organization of FEDLINK, the Federal Library and Information Center Committee (FLICC), has spent most of this year setting a vision for the Year 2000 and performing a strategic analysis of issues related to that vision. The vision (see attachment) defines the primary areas in which federal libraries and information centers can add value to their agencies' programs as we approach the 21st century. In order to prepare ourselves for these strategic directions, FLICC has analyzed the internal strengths and weaknesses, and the external opportunities and threats that must be addressed in our plans to achieve the vision.

The identified strengths of federal libraries and information centers: 1) the talents and dedication of staff; 2) the depth and quality of print collections; and 3) our developing facility with automated tools. Weaknesses cited by FLICC include our difficulty "reinventing" ourselves and our inability to articulate to agency decision-makers what we now do and what we are capable of doing in the future. There are many opportunities, such as the affordability and availability of information technologies to communicate federal information. The threats are familiar to all of us--downsizing, budget-cutting, reorganizing, and the perception that libraries are expendable.

At this point in FLICC's strategic planning process, we are just beginning to grapple with what actions FLICC/FEDLINK can take to help federal libraries and information centers exploit strengths, overcome weaknesses, seize opportunities, and turn threats into opportunities. Some of the early suggestions are:

- continued training/education in the new technologies
- assistance in making library/information services understandable and vital to agency decision-makers
- development of Principles of Service--i.e., information resource standards for federal agencies to help them assess the value of library services to their agency mission

FEDLINK's Vision for the Future

At the November FLICC meeting, members will be asked to help develop concrete action items for the FLICC/FEDLINK program for calendar 1996. All federal libraries are invited to contribute their ideas to this process by writing, faxing (202-707-4818) or e-mailing me (suta@loc.gov).

As we move into fiscal 1996, I am please to report a number of improvements in the FEDLINK program:

- simpler registration instructions in a shorter Registration Booklet and a separate Member Handbook structure as a reference tool.
- 5-year serials and book BOAs which are annually renewable.
- sixteen new book vendors, including some publishers and specialty jobbers, in addition to our ten 1995 suppliers.
- increased threshold (from \$25,000 to \$100,000) for the Direct Pay supplemental fee.
- plans for open solicitation for new online services vendors to begin as soon as procedures are in place.
- scheduled FEDLINK exhibits at SLA and ALA Annual conferences.
- 43 % reduction in throughput time for delivery orders in fiscal 1995.
- three new listservs: FEDCAT-L (for catalogers), FEDREF-1 (for reference librarians) and FEDACQ-L (for acquisitions specialists).
- updated and enhanced Internet training.

We are open to your suggestions for new services and program improvements. I encourage you to keep us informed of your needs.

2000 Vision

**What do You See as
the Appropriate Role
for Federal
Libraries and
Information Centers in
the
Year 2000?**

In the year 2000 and beyond . . .

■ Agency Management

■ Public Access

■ Information Management

■ National Digital Library

■ Professional Development

2000
Vision

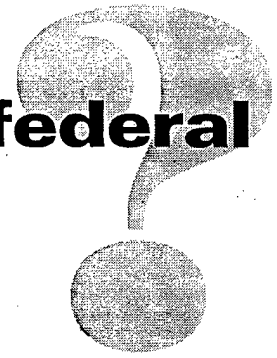
What are strengths of federal libraries which can be built on to achieve the vision?

What are weaknesses of federal libraries which could prevent them from achieving the vision?

What external opportunities can libraries take advantage of to achieve the vision?

What external threats could present barriers to achieving the vision?

What can FLICC do to help federal libraries:



- **exploit their strengths?**
- **overcome their weaknesses?**
- **seize opportunities?**
- **avoid threats?**

In the year 2000 and beyond, the mission of federal libraries and information centers is to contribute to the public good in the following areas:

■ **Agency Management**

- increasing federal productivity by providing quick and effective access to information for agency staff
- providing centers of excellence and expertise in information access and management
- serving as the agency's institutional memory, providing continuity and archiving of program information, ensuring access for future generations

■ **Public Access**

- serving US citizens on behalf of their agencies
- promoting open, democratic access to information
- providing leadership in development of policies and procedures that advance dissemination of government information

■ **Information Management**

- developing partnerships for information delivery
- providing expert guidance in information source selection
- reengineering and streamlining information access and delivery
- making effective use of new computer and telecommunications technologies

■ **National Digital Library**

- comprising the federal node in the "national digital library"
- planning and organizing electronic data archives
- spearheading solutions to electronic challenges, such as standards and intellectual property rights
- providing electronic access to data wherever it resides

■ **Professional Development**

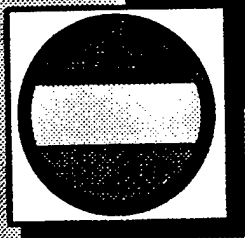
- recruiting and training outstanding librarians/information specialists to meet future challenges of electronic information dissemination
- continuing support of a multicultural and diverse profession



Services and Vendors for FY96

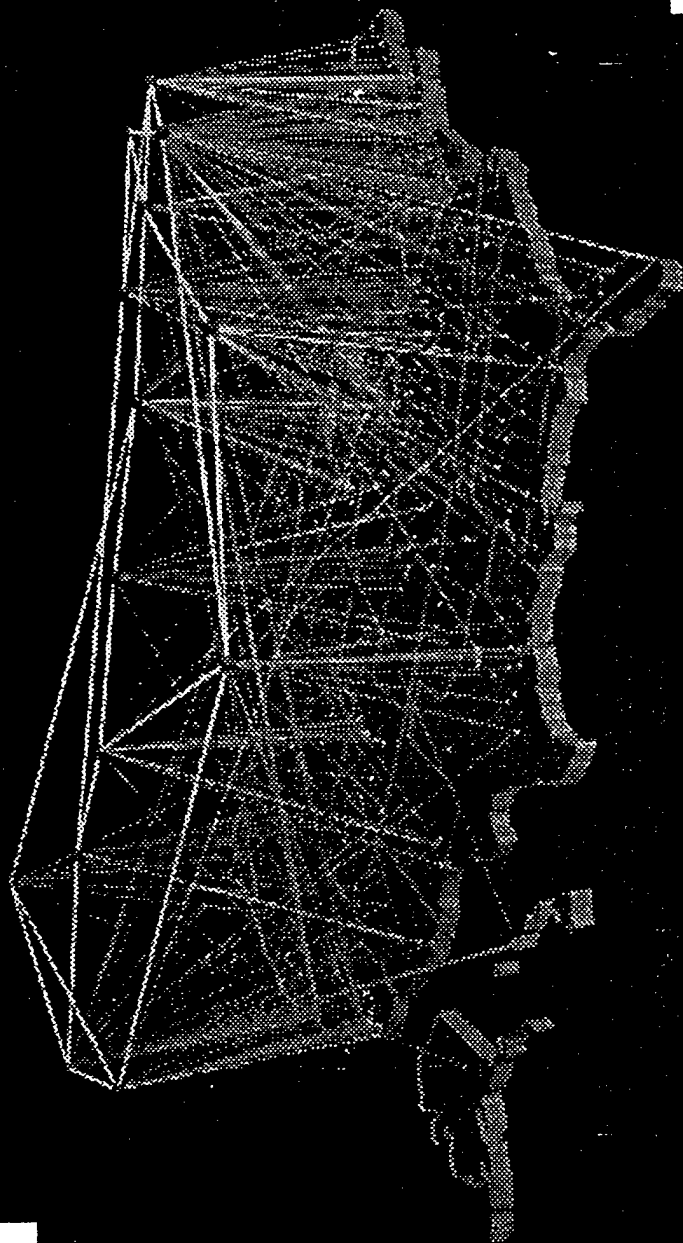
Vendor	ID	BOA#	Service
Ambassador Book Service, Inc.	AB	96CLFB74502	Pubs-Books
Aristotle Industries	AE	95CLFB70046	IRS-Online
Academic Book Center, Inc.	AC	96CLFB74513	Pubs-Books
Alfred Jaeger, Inc.	AJ	96CLFB74526	Pubs-Books
Back Associates, Inc.	BK	96CLFB70001	IRS-Online
Blackwell North America	BN	96CLFB74510	Pubs-Books
Brodart Company	BD	96CLFB74517	Pubs-Books
Cambridge Scientific Abstracts	SA	95CLFB70038	IRS-Online
Chemical Abstracts Service	CA	95CLFB70033	IRS-Online
Claritas, Inc.	KL	95CLFB70042	IRS-Online
Database America	DB	95CLFB70044	IRS- Online
Data-Star Marketing, Division of Knight-Ridder	DS	95CLFB70050	IRS-Online
Desktop Data, Inc.	DT	95CLFB70026	IRS-Gateway
Knight-Ridder Information Services, Inc.(DIALOG)	DI	95CLFB70007	IRS-Online/CD-Rom
Dow Jones & Company, Inc.	DJ	96CLFB70008	IRS-Online
DRI/McGraw-Hill	DM	95CLFB70031	IRS-Online/CD-Rom
Dwight's Energydata, Inc.	DY	95CLFB70005	IRS-Online/CD-Rom
EBSCO Subscription Services	EB	95CLFB71004	Pubs-Serials
The Faxon Company	FX	95CLFB71003	Pubs-Serials
Federal Research Service, Inc.	FR	95CLFB70012	IRS-Online
The H.W. Wilson Company	WI	95CLFB70013	IRS-Online/CD-Rom
Information Access Company	IA	96CLFB70009	IRS-CD-Rom
Information America, Inc.	IO	95CLFB70019	IRS-Online
Article Express International Inc.	IF	95CLFB74005	Pubs-Doc.Del.
Ingram Library Services Inc.	IB	96CLFB74512	Pubs-Books
ISI/Genuine Article	UI	95CLFB70009	Pubs-Doc.Del.
KISCO USA	NT	95CLFB70032	IRS-Online
Legi-Slate, Inc.	LL	95CLFB70035	IRS-Online
Lexis-Nexis	ML	95CLFB70008	IRS-Online/CD-Rom
Merriam-Webster	ME	95CLFB70017	IRS-CD-Rom
Midwest Library Service	MW	96CLFB74515	Pubs-Books
NewsBank	NB	95CLFB70030	IRS-CD-Rom
Newsnet, Inc.	NS	95CLFB70011	IRS-Online/Gateway
Online Computer Library Center (OCLC)	OC	96CLFB73001	LSS-Bibliographic Utility
Potomac Systems, Inc.	PS	95CLFB70001	IRS-Online
The Professional's Library	MP	96CLFB74511	Pubs-Books
Readmore, Inc.	RE	95CLFB71001	Pubs-Serials
The Research Libraries Group, Inc. (RLIN)	RL	96CLFB73002	IRS-Bibliographic Utility
Tax Analysts	TA	95CLFB70049	IRS-Tape/CD-Rom
Telebase Systems, Inc.	EN	95CLFB70028	IRS-Gateway
Timeplace Inc.	TE	95CLFB70022	IRS-Online
University Microfilms, Inc.	UM	95CLFB74002	Pubs-Microforms
University Microfilms Intl.(UMI)	UR	95CLFB70006	IRS-Online/CD-Rom/Doc.Del.
The WEFA Group	WG	95CLFB70015	IRS-Online
West Publishing Corporation	WE	95CLFB70040	IRS-Online/CD-Rom
British Library Document Supply Centre	BL	96CLFB74000	IRS-Doc.Del.
Jaeger & Waldman GmbH	YW	95CLFB70004	IRS-Tape
American Business Information, Inc.	AI	M-74013	IRS-CD-Rom
American Overseas Book Company	OB	95CLFB71004	Pubs-Serials
American Overseas Book Company	OV	96CLFB74504	Pubs-Books

ARMY KNOWLEDGE NETWORK



FORCE

XXI



DR. RICK MORRIS
COMMAND HISTORIAN
12 JANUARY 1994

WARFIGHTER XXI

TRADOC: WHERE TOMORROW'S VICTORIES BEGIN

ARMY KNOWLEDGE NETWORK

PURPOSE

✓ CONCEPT UPDATE

✓ PROJECT SITREP



MISSION

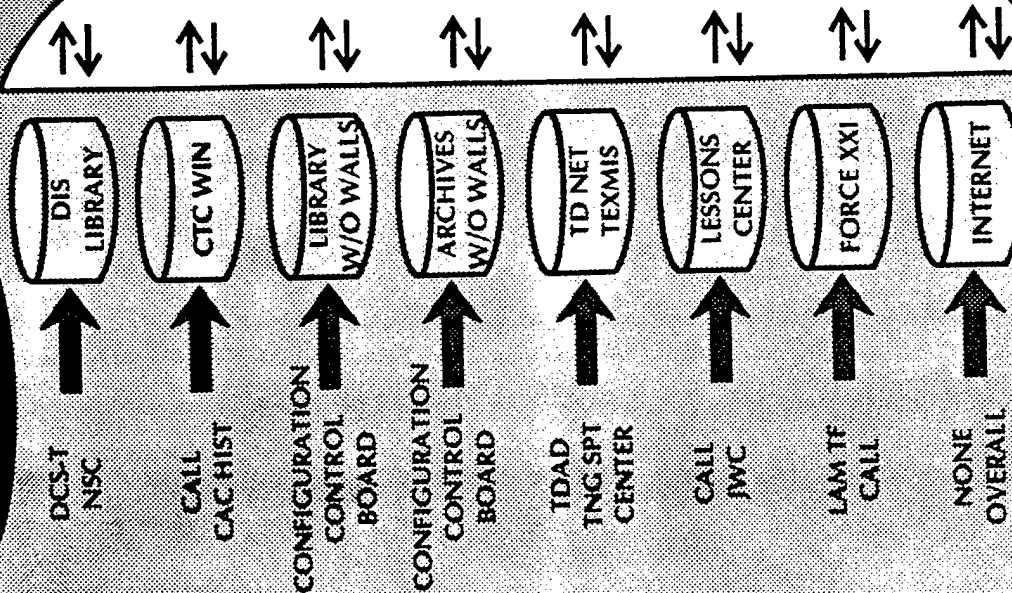
- BRING THE ARMY'S CORPORATE KNOWLEDGE
BASE ONLINE

- PROVIDE INTERACTIVE ACCESS FOR:

- EVERY JOINT AND ARMY OFFICE
- TOTAL ARMY SCHOOL SYSTEM
- ALL RESEARCH CENTERS
- EVERY TOC

THE CONCEPT

DATABASE



GATEWAY

CONFIG CONTROL BOARD
LAM TF, CALL, ATSC, MHI
AND CAC HISTORY

PROTOTYPE SYSTEM
MARINES, AF, JCS

THE USERS

INTEGRATED, INTERACTIVE,
MULTIMEDIA, KNOWLEDGE
SET OR SIMULATION

QUERY
RESPONSE

QUERY
DATA

USER TAILORED
QUERY OR TASK

COMMUNICATIONS

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C2 PROPONENT,
LOCAL DOIMS

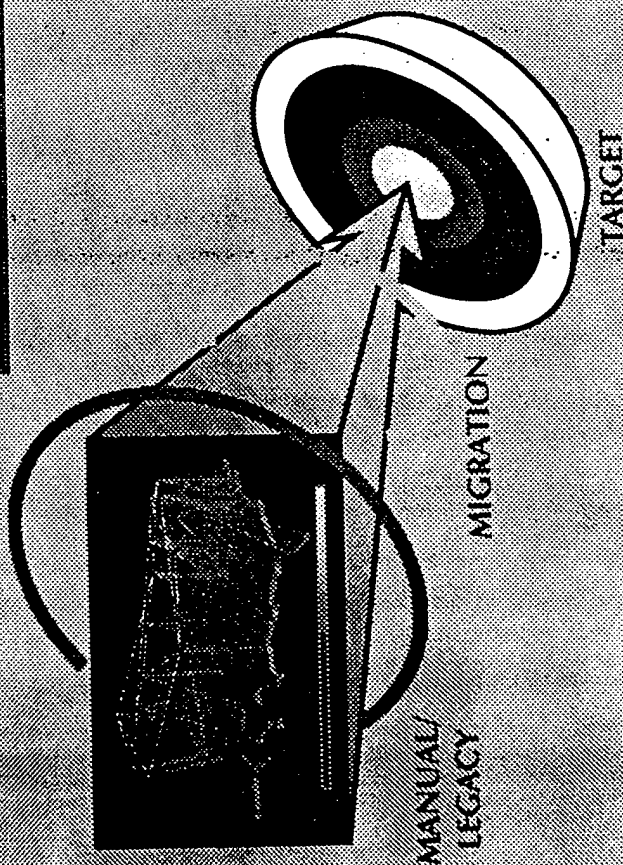
OR-OR-

CTC WIN

LAN

TRADOC: WHERE TOMORROW'S VICTORIES BEGIN

THE COMPONENTS



GATEWAY

- ✓ HARDWARE, SOFTWARE, PROTOCOLS AND APPLICATIONS
- ✓ PROVIDES SEAMLESS / TAILORED / GLOBAL ACCESS, SEARCH AND RESPONSE ACROSS DATABASES
 - PLUG IN, GO ANYWHERE
 - MULTIPLE PATHS TO DATA
 - MULTIPLE SEARCH/RETRIEVE METHODS
- ✓ CONFIGURATION CONTROL BOARD

DATABASE

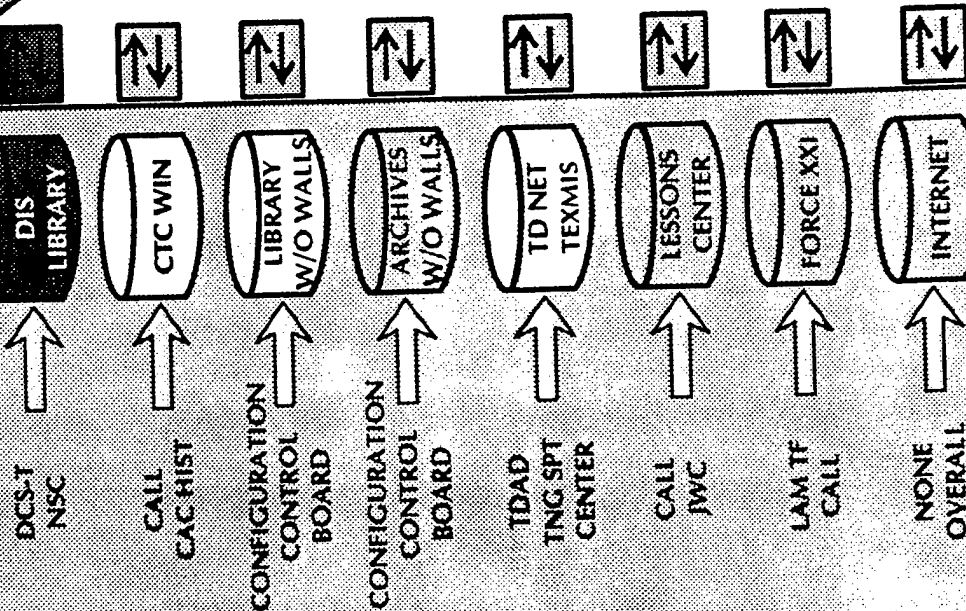
- ✓ MULTIPLE, DISTINCT ARMY/JOINT/CIVILIAN DATABASES - OUR CORPORATE KNOWLEDGE BASE
- ✓ ARCHIVES AND PROVIDES HISTORICAL AND OPERATIONAL DATA, SOFTWARE AND TAILORED SIMULATIONS IN AN INTERACTIVE MULTIMEDIA FORMAT
- ✓ MULTIPLE MANAGERS - INPUT, MAINTAIN, QUALITY CONTROL

COMMUNICATIONS

- ✓ USE EXISTING COMO SYSTEM (NO NEW PIPES) TO LINK USERS, GATEWAY AND DATABASE
- ✓ PROVIDE MULTILEVEL/MULTIMEDIA ACCESS FOR ALL USERS
 - WIRELESS CAPABILITY
 - COLLECT-STORE-DOWNLOAD CAPABILITY (STAARS)
 - FULL COMMUNICATIONS PROTECTION
- ✓ DISA, C2 PROONENT?, LOCAL DOIMs

AKN SITREP

DATABASE



GATEWAY
CONFIG CONTROL BOARD
LAM TF, CALL, ATSC, MHI
AND CAC HISTORY

THE USERS
154 AHAS ACCOUNTS
(CONUS, EUROPE,
HAITI)

INTEGRATED, INTERACTIVE,
MULTIMEDIA, KNOWLEDGE
SET OR SIMULATION

QUERY
RESPONSE

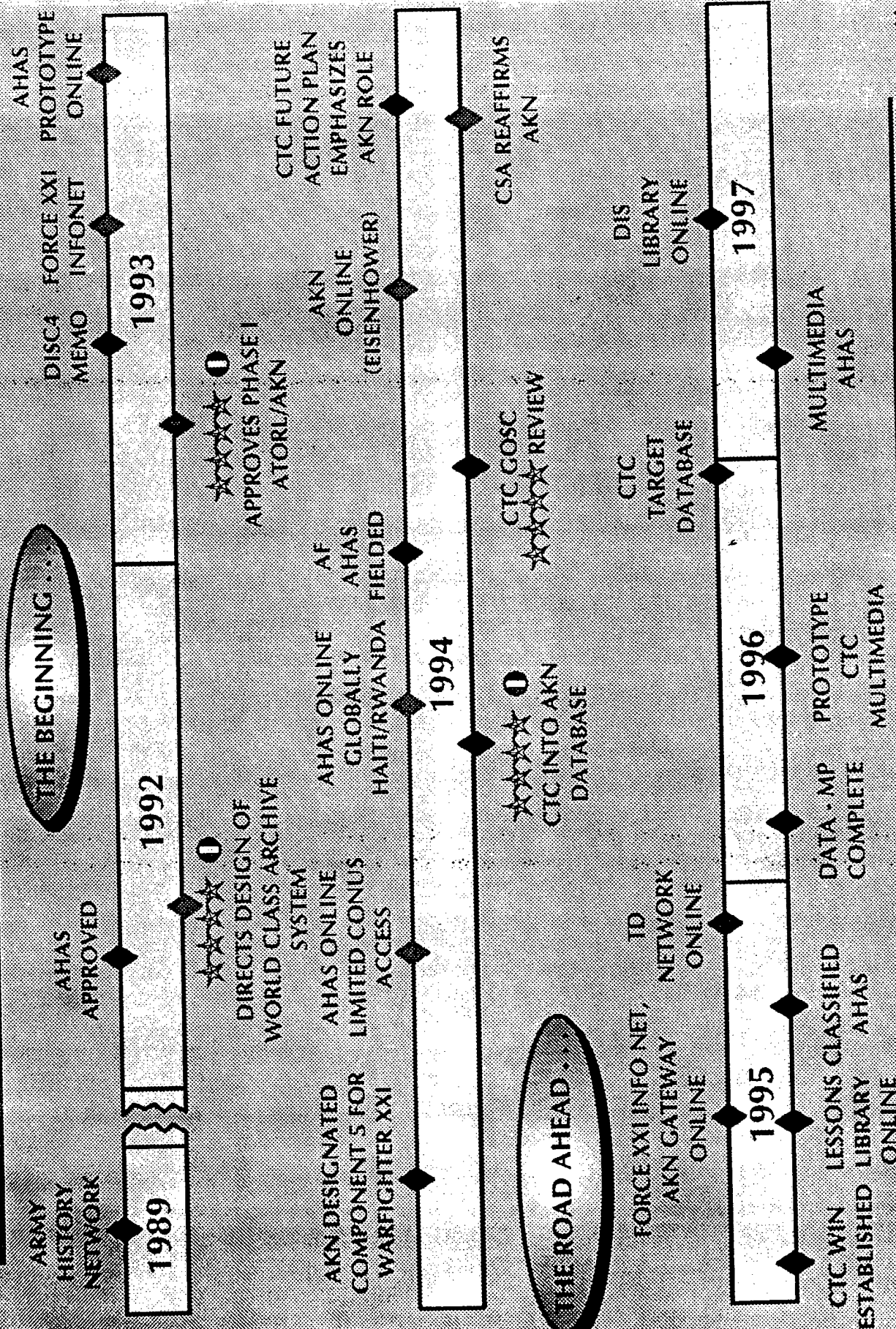
QUERY
DATA

USER TAILORED
QUERY OR TASK

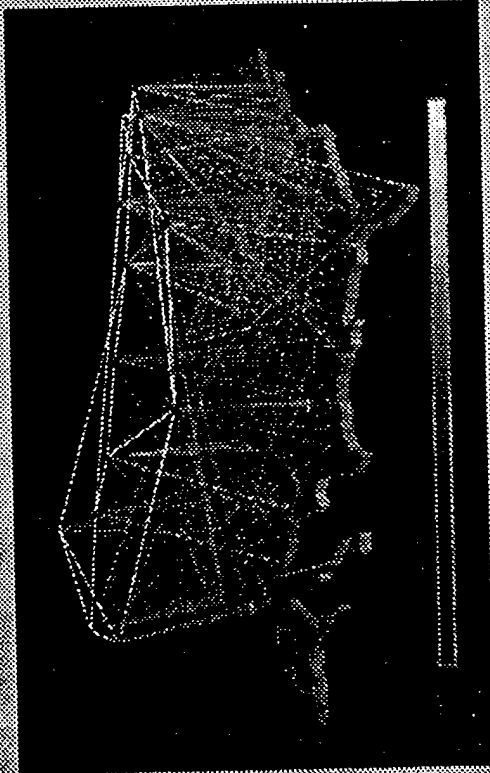
COMMUNICATIONS
DISA,
C2 PROPONENTS,
LOCAL DOIMS

TRADOC: WHERE TOMORROW'S VICTORIES BEGIN

ARMY KNOWLEDGE NETWORK MILESTONES



CHALLENGES



✓ CREATING / SUSTAINING DATABASES

✓ ACCESS AND SECURITY

✓ RESOURCES

- MANPOWER
- BUILDING THE RIGHT TEAMS
- CAPITAL INVESTMENT

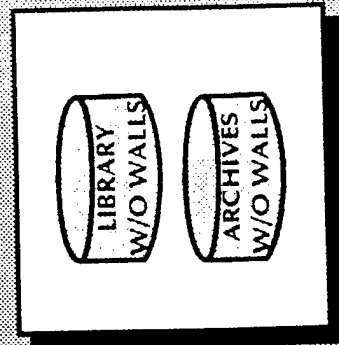
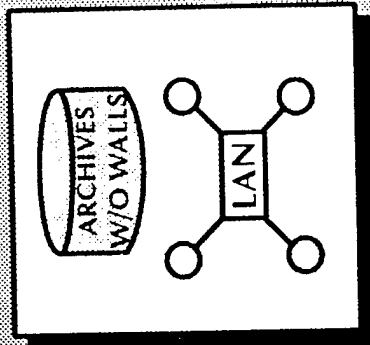
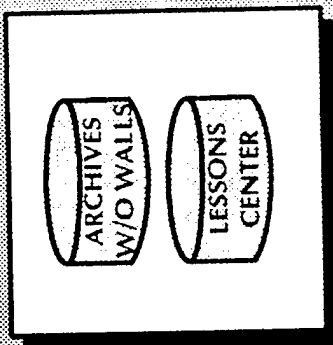
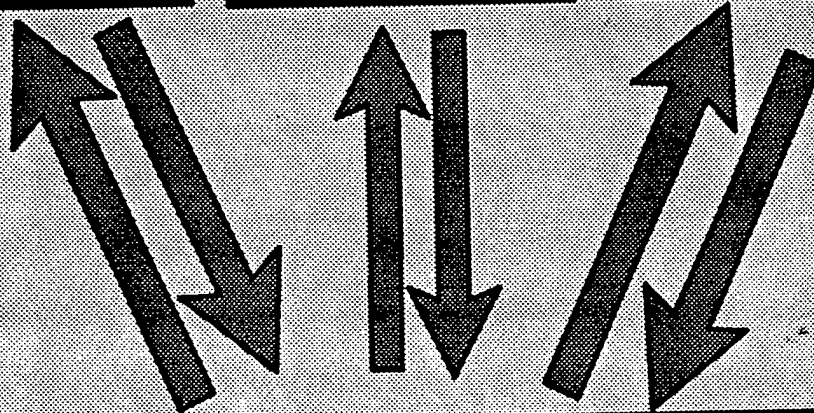
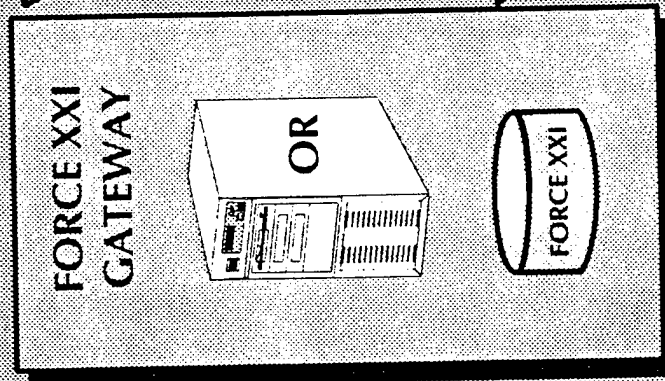
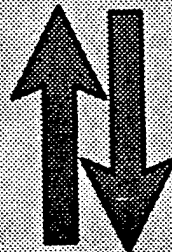
BOTTOM LINE

- GOOD START; MUCH REMAINS TO BE DONE
- ONLY AVAILABLE TO LIMITED USERS
- TAKES TIME TO BRING THE ARMY'S CORPORATE KNOWLEDGE BASE ONLINE
- THE GATEWAY IS THE TOUGH NUT

AKN DEMONSTRATION

SCENARIOS

- ✓ PLANNER HAITI
- ✓ INSTRUCTOR GULF WAR
- ✓ STUDENT HURRICANE ANDREW



TRADOC: WHERE TOMORROW'S VICTORIES BEGIN

Army Knowledge Network: An Overview

Slide 1

The Army Knowledge Network or AKN is the subject of this overview.

The AKN is a confederation of databases with a delivery mechanism, or gateway

The AKN goal is to distribute knowledge sets and applications globally.

These will include virtual and constructive simulations and multimedia archives, libraries, publications, presentations and relational data.

The AKN is similar to, and linked with, the Internet, which is pictured here as the AKN symbol.

Like the Internet, the AKN is owned and managed by no one organization.

Participants in AKN adhere to a set of defined standards in hardware and software configurations and communications protocols.

A configuration-control board sets these standards.

The AKN is meant to serve as prototype and test bed for a Joint Knowledge Network.

Slide 2

I am here to provide you with a a short review of the AKN concept, a brief sketch of how we intend to implement and a project SITREP.

Following the briefing, we will demonstrate AKN capabilities from the user's perspective.

Pause

With the approval of the Chief of Staff Army, the previous TRADOC commander assigned a two-fold mission for the AKN.

First, the AKN is to bring the Army's corporate knowledge base online.

Second, the AKN is to provide interactive access to that knowledge for:

- every joint and Army office;
- the Total Army School System;
- all Research Centers
- every TOC

The potential user base for AKN is thus immense: the Army; the joint community; other government agencies; and, to the extent permitted by security, the general public.

Fort Leavenworth, working with the Military History Institute at the U.S. Army War College and the TRADOC Military History Office, developed the AKN concept to put the knowledge base online with interactive access.

Pause

Slide 3

The AKN concept starts with the user.

The concept envisions bringing almost instantly updated multimedia knowledge sets and simulations to users on personal computers or in TOCs.

Users apply their personal computers to formulate a query or task, which is then answered or executed on powerful servers distributed across the globe.

The AKN delivers the required data or response back to the PC or TOC, where local and server applications permit further tailoring to user needs.

Depending on user needs and gatekeeper policy, the resultant user products may or may not be themselves automatically uploaded into the corporate knowledge base.

Pause

To meet the user need for interactive knowledge, the AKN concept depends on three synchronized components:

The database;

The gateway;

Communications;

The original concept, developed in 1992, focused on the database.

The updated concept leverages lessons-learned, and takes into account the Force XXI definition of the requirement and advances in vision and technology.

Force XXI, launched by Chief of Staff Army in March 1994, is the concept for an Information-Age Army.

According to the Force XXI concept, the Army will organize its preparation for war, processes for change, and military operations around information or digitized knowledge.

As presented here, the concept fully incorporates the gateway and communications components.

Let me describe the concept for each component.

Pause

The AKN database consists of the online knowledge base and simulations.

It includes the applications that permit users to interact with that knowledge and those simulations.

The concept envisions a joint database, with full access to the rich military and civilian resources of the Internet.

The slide lists a number of subordinate databases, each significantly influenced by the TRADOC commander.

This list is not exclusive.

Indeed, AKN is open to the exploding world of online military and civilian databases, simulations and applications.

Pause

The gateway constitutes the second AKN component in the updated concept.

The gateway consists of the technology, standards and protocols that enable the user to interact with this distributed database.

The concept foresees a multilayered gateway capability.

A user might choose, for example, to query or assign a task to only one of the constituent data bases.

For example, a commander reviewing his unit's last NTC performance might enter directly into the CTC Warrior Information Network or CTC WIN.

To give a second example, an instructor in the CGSC might consult, while preparing a multimedia class, the digitized video library on the local area network in Eisenhower Hall.

Pause

On the other hand, a user might prefer a seamless search and response across all constituent databases.

From the user's perspective, the multiple AKN databases appear as one database.

Indeed, from the user's perspective the gateway transforms the AKN into a one-stop, interactive virtual library.

Pause

Communications form the final component of the updated AKN concept.

Whether highway or cyberspace, communications permit the virtual library to be distributed with users, databases and gateways spread around the world.

The communications infrastructure permits a query or task to be split between the user's PC or TOC, called the client, and one or more gateway and database servers.

Addressed early on and well communications will prove the key enabler.

Neglected, they will be the Achilles heel of AKN, negating even the most effective database and gateway designs.

Pause

The communications component has national, DoD, local and tactical dimensions.

Often the last mile is the hardest, with non-existent or poorly crafted LANs frustrating fast, easy AKN interactivity.

By concept, responsibility for databases, gateways and connections is distributed.

Individual databases have single, multiple or configuration board managers.

A configuration control board manages the gateway.

The DISA and local DOIMs are responsible for communications highways.

The Command and Control proponent should be responsible to ensure connectivity to TOCs.

Pause

The AKN concept has found favor with the Marine Corps, Air Force and Joint Staff.

It serves as prototype for their initiatives in bringing knowledge online.

Slide 4

Pause

Sir, we intend to develop the AKN in two broad steps.

The first step takes us from legacy to migration system.

We inherit, if we inherit anything, manual or legacy systems.

A manual system exists in original format with or without computerized catalogs.

Examples include a traditional library or paper archives.

A legacy system is closed, proprietary and hard to access like the old CTC archives.

Pause

A migration system consists of commercially based, open systems operating in a partially distributed, client-server mode.

Users access thorough a Graphical User Interface, that is point-and-click.

Pause

The second step takes us from the migration to the target system.

The target AKN will have all the attributes of the Migration System and more.

It will also provide full interactive multimedia, full distributed processing and multilevel secure databases, gateways and communications.

Multimedia means online audio and video.

Distributed processing means simultaneous execution of a query or task across multiple computers.

A Multilevel Security System or MLS is a system containing information with different security classifications.

The MLS simultaneously permits access by users with different security clearances and needs to know.

This system prevents users from obtaining access to information for which they lack authorization. It ensures that they do get what they need to know and are authorized to see.

The target AKN will also make full use of Artificial Intelligence or Expert Systems.

These will include intelligent agents or knowledge navigators, and intelligent tutors, to teach users how to optimize their interaction with online knowledge sets and applications.

Intelligent agents may serve as the single user interface or master client, making it necessary for a user to master only a single, thoroughly interactive application.

They may also support systems administration.

Pause

The target AKN will function as the Interactive Library for the Land Warfare University.

It will significantly strengthen the organizing principle of Force XXI, i.e., "the creation and sharing of knowledge followed by unified action based on that knowledge."

Pause

The target AKN gateway is comprised of a hardware-software infrastructure, protocols and standards, and applications for query and task execution, including upload and download.

The target system will apply artificial intelligence, so-called expert systems or intelligent agents, to provide seamless, user-tailored searches against all or part of the database.

The user will be able to plug in from anywhere:

- from a hotel or private residence;

- from an Army office, school, or center;

- even from a TOC on the move.

The user will be able to reach and interact with any online knowledge set, simulation or application.

Responsibility for the target gateway belongs to an Army and Joint control board working within DoD, national and international standards and protocols.

Pause

The target database will incorporate multiple, distinct Army, joint and civilian databases.

These constitute our corporate knowledge base, with the capability for continuous, often instant update.

The one-stop target database will archive and provide data in an interactive, multimedia format.

Its contents include historical and operational data, software and tailored simulations.

Database managers input data, improve technology and methodology and ensure quality.

The target database incorporates multiple managers for multiple component databases.

Especially complex subordinate databases like the Archives Without Walls will be managed by Joint Configuration Control Boards.

Pause

Target AKN communications use existing commo systems to link users to the virtual library.

These communications will provide interactive multilevel secure and multimedia access for all users.

Slide 5

Pause

Sir, the following is my AKN SITREP as we build the migration capability on the road to the target.

Red represents a shortfall that if uncorrected would prevent concept implementation.

Amber indicates important progress towards an open-systems capability, but significant legacy-system residues.

Green represents a growing open-system capability that is either fielded or about to be fielded by the end of the calendar year.

Pause

User status is amber with 2009 AHAS and Force XXI InfoNet accounts.

The number is expected to continue to grow at a rapid pace in the upcoming Calendar Year as additional databases and large communities such as the combatant units, CTCs and TRADOC schools (implementing Classroom XXI experimentation) come online.

The CGSC, for example, fielded almost 1200 additional accounts in the late summer.

AKN fielding is still by user demand and command guidance.

Moreover, the lack of an industrial-strength classified AHAS makes it impossible to deliver other than manually the data most desired by planners and student researchers.

Systematic training is key.

We are at the start of an Installation and Training program with associated help desk.

This program envisages using video, online tutorials and Classroom XXI to help both installers of client software and users to go to work on AKN as quickly and effectively as possible.

CGSC Classroom Without Walls efforts will mark a decisive breakthrough in re-engineering the classroom to exploit information technologies, and thus will create the cultural climate for effective use of AKN.

On the recommendation of Brigadier General Pat O'Neal, we are constructing a CTC WIN Test Bed community to include units battalion through corps at Fort Hood.

We have begun execution of the CTC DATA-MP to assess user requirements for data and documents.

Pause

Total Army fielding would exceed the ability of available hardware and software licenses for concurrent users to support.

Prudence requires completion of scalability studies now under way and the subsequent fielding of sufficiently robust gateway and database infrastructure.

On the other hand, the transition of Force XXI InfoNet to Army Knowledge Network by year's end will expand the resources available for customer service.

This will much increase the pace of fielding and the availability of help desk services on demand.

Pause

The status of the communications component is red.

Communications were not part of the original AKN concept on the erroneous assumption that communications would take care of themselves.

AKN does not involve new pipelines and is not itself a physical network.

The AKN must, however, help define communications requirements and priorities, and must trigger action to meet commander's intent.

The communications problem has Wide Area Network (WAN), Local Area Network (LAN) and TOC components.

Pause

Recently, we have taken some important steps in the communications area.

The CTC DATA-MP is assisting in the determination of user connectivity requirements and capabilities, and in prioritizing the correction of shortfalls.

Here at Ft Leavenworth, the AKN team led by the DOIM and CALL recently upgraded the Modem Server Capability.

LAM TF will field a fax server for the Archives Without Walls, Lessons Library and Force XXI InfoNet.

An effort is underway to field a secure campus network at Fort Leavenworth, with a barebones point-to-point prototype up expected to be operational by the start of 1996.

This will connect by next summer to the SIPRNET.

The SIPRNET is part of the Global Command and Control System.

The SIPRNET provides point-to-point classified connectivity across the DoD.

Pause

These actions notwithstanding, we need Army leadership help to move out of the red zone.

Effective address of the commo component requires high-level intervention, to engage the DISA, the Army's Command and Control Proponent and the Signal Center.

Pause

The status of the database is amber.

The Distributed Interactive Simulation (DIS) Library is red.

The DIS Library is vital but not yet underway.

Responsibility needs to be assigned.

Pause

The Library Without Walls is amber, with green in respect to systems and amber in respect to uploading.

The Library Without Walls was approved in principle in November 1992 by CG TRADOC, and endorsed by the Joint Staff in December 1992.

The Library Without Walls is partially stalled, except for Joint Electronic Library or JEL and the Training Support Center's initiatives with doctrine and training literature, and CARL efforts to put CGSC theses online.

Manpower should be applied to this requirement for copy-wright release and digitization of publications under the ATORL and Classroom without Walls concept.

Close coordination is needed between the Army Training Support Center, Program of Joint Military Education Libraries, Army Libraries, the JEL, the DTIC and the Archives Without Walls.

Pause

Also amber is the Army Training Digital Library.

The ATDL is at the very heart of Warfighter XXI.

Under the ADCST, the ATDL has made extraordinary progress and will set the standard for Army and joint training development and support applications.

At this juncture, however, very little is online for global distribution.

Pause

Amber, too, is the CTC Warrior Information Network or CTC WIN.

In September, we moved the manual and legacy CTC archives here from Monterey, California.

These now reside in Bell Hall.

Their very physical location, approved by BG Rigby and supported by BG Frazar, support and symbolize the fusion of Army Training and Classroom XXI in the emerging Warfighter XXI campaign plan.

The documents are now being uploaded on the AHAS, thus recasting part of the legacy database into an advanced migration form.

Other elements are being reprogrammed, but will not be accessible on a globally available open system early in 1996.

The migration CTC WIN is thus underway but incomplete, with the Data Master Plan being executed to design the target.

Pause

The Archives Without Walls is green as are the migration Lessons Center and Force XXI InfoNet.

The Automated Historical Archives System or AHAS constituted the AKN prototype database, the first installment of the Archives Without Walls, and the first fielded migration system.

One of the world's most powerful electronic conversion systems, fielded by the Navy DPS here at Fort Leavenworth to support AHAS, uploads from original format.

Currently, about 600K pages are online, mostly from real operations, Vietnam to the present, and the CTCs.

As mentioned earlier, there are 2009 AHAS accounts, with an expected large growth in FY 96.

The Air Force acquired a mirror-image AHAS this summer, while the Marine Corps is considering procuring its own.

The AKN concept provides for follow-on systems at the Military History Institute and the Center for Military History.

The Migration Lessons Center and Force XXI Database are online and available through the gateway.

The CALL is coordinating with the Joint Warfare Center in preliminary efforts to make the Lessons Library truly joint.

Internet connectivity is also green.

Explosive growth of databases and Internet resources means that vast resources are available beyond these start-up AKN databases.

Pause

An AKN entry system or gateway, provided by Force XXI InfoNet, is green.

LAM Task Force resourced Force XXI InfoNet.

The prototype is tested and functional as you will see today.

It has a point-and-click GUI and provides a delivery mechanism to separate applications.

The hardware infrastructure is in place.

Software fielding started in March; hundreds of users are online.

Slide 6

Pause

Sir, I would like to review the AKN milestones.

The TRADOC commander approved the initial vision and mission statement in mid-1992.

He approved the expanded vision, now dubbed AKN, in January 1993.

LAM resourced InfoNet in mid-1993.

The prototype database, AHAS, came online in demonstration form in December 1993.

In March 1994, AHAS came online in CONUS with its first mass upload.

In the summer of 1994, this prototype came online globally in support of the Rwanda and Haiti operations.

With the opening of Eisenhower Hall on 9 November 1994, the prototype gateway and prototype database came online within the institutional pillar of leader development.

On 21 December 1994, the Chief of Staff, Army reaffirmed AKN.

Throughout 1994, there was exponential growth of other databases being linked to AKN.

Pause

1995 brought the Lessons Library, Force XXI InfoNet, Army Training Digital Library and CTC WIN online globally.

Completion of the CTC DATA-Master Plan will define user data, automation and communications requirements, and design the CTC Target Common Database.

Unfunded but an FY 96 goal is procurement and fielding of the classified AHAS optical disk jukebox and connectivity for global point-to-point networking of classified documents.

In 1996, we will demonstrate a prototype multimedia capability and the CTC Target Common Database.

The aim is to upgrade the AHAS, and thus key components of other databases, to full multimedia functionality in 1997.

That year should mark, too, fielding of the prototype DIS Library.

Slide 7

Pause

Our challenges are threefold:

First, we must create and sustain the databases.

This requires technology and manpower infrastructure.

The technological infrastructure requires research and development, that is careful selection of commercially-based systems, their integration with one another and their programming.

Methodology for the manpower infrastructure must be created according to standards, documented and exported.

Loading the database is especially resource intensive.

Uploading includes collection, transfer to the processing hub, structuring, preservation, digitizing, cataloging, indexing and quality assurance.

Pause

The target AKN requires fielding the Standard After Action Review System or STAARS.

Target STAARS entails a collect-store-download capability embedded in operational and simulation systems.

Pause

The second challenge is access and security.

We must ensure software, training, and connectivity for the field.

A true AKN requires more than fielding on demand.

On the other hand, full fielding requires full hardware, software, and communications infrastructure.

Also required are classified databases online globally, and as much declassification and public release as possible.

Pause

Full communications protection is essential

Protection ensures that those authorized to know receive data, and that those not authorized to know do not.

Communications protection ensures reliable data, and fends off malicious or deliberate attack.

Such attack is more likely to occur precisely in proportion to the degree that AKN (a) fulfills its potential as a virtual library for the virtual campus, and (b) becomes a center of gravity in Army operations.

There must be no electronic Pearl Harbor.

Pause

The third challenge is resources.

For the moment, the AKN has more missions and dollars than manpower.

This is new work and manpower intensive.

The work involves cutting-edge methodology and technology, and cuts across many functions and organizations.

It requires just the right mix of skills at just the right level of complexity.

Pause

Capital investment is vital.

To date, AKN has been very successful in using other people's money.

But the capital investment funds are all but gone.

The Bottom Line is this:

AKN has come very far, very fast and represents a good start.

Much remains to be done, however.

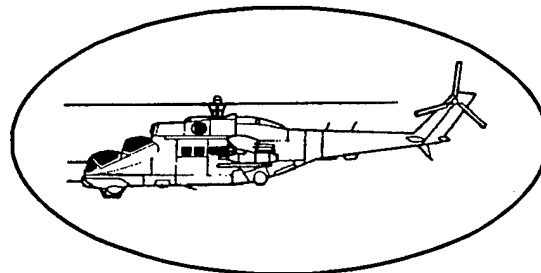
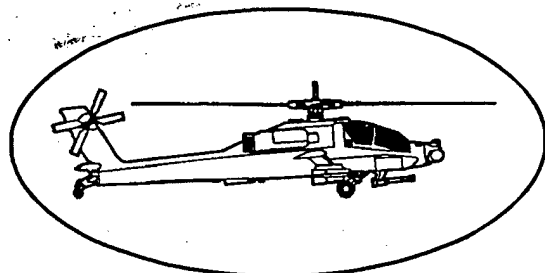
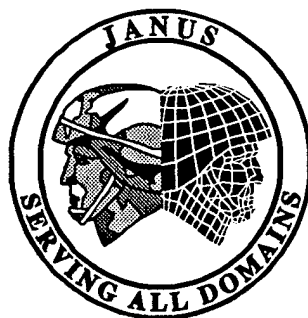
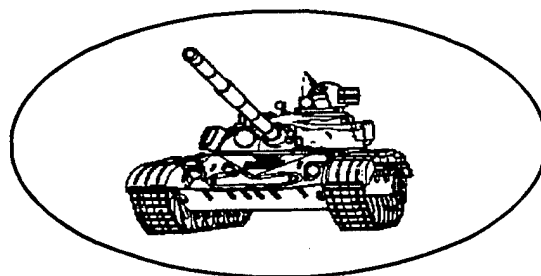
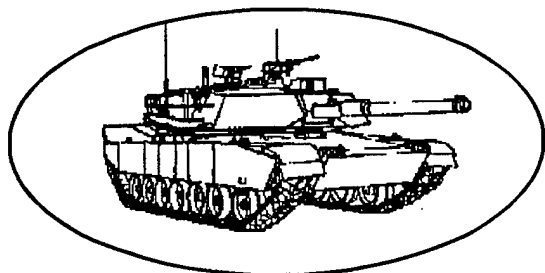
The current AKN is available only to limited users.

It takes time to bring the Army's vast corporate knowledge base online.

The gateway is the toughest nut to crack, since it requires expert systems, advanced communications, and the most advanced distributed processing.

Close coordination must unfold to glove AKN into broader DoD, national and global efforts to digitize knowledge -- to distribute knowledge not as atoms but as bits in a fledgling but emerging global library Without Walls.

TRAINING OPPORTUNITIES WITH THE JANUS GROUND COMBAT SIMULATION



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INTRODUCTION

Janus is an interactive, computerized ground combat simulation being fielded throughout the U.S. Army in support of battle-focused training. **Janus** is a highly flexible tool, which permits the development of tactical scenarios virtually anywhere in the world against any desired opponent. It is fully interactive, with provision for a live, thinking Opposing Force (OPFOR) which affects and is affected by friendly actions. **Janus** displays tactical level combat in real time using clear, high-resolution graphics on digitized terrain portrayed in military map format. It models direct and indirect fire, air and ground movement, engineer and natural obstacles, observation, terrain effects, logistics, field fortifications, and other factors affecting tactical combat. **Janus** is government owned, and operates on low cost, off-the-shelf computers. It can be fielded in classroom or portable configurations.

Janus is already in use at various TRADOC schools and centers, as well as at unit and regional simulation centers. It has proven itself to be an efficient, effective tool in tactical training from the squad through brigade levels. **Janus** is

also the simulation used to support the Tactical Commanders Development Program (TCDP) at Ft. Leavenworth, KS. Its unique combination of realism, audience impact, clarity, speed and ease of use, and adaptability make it exceptionally valuable as a means for commanders and staffs at all tactical levels to learn and practice many Mission Essential Task List (METL) and METL-supporting tasks. **Janus** also offers many opportunities for support of training, research, and operational functions.

This paper outlines a number of training opportunities and methods using **Janus**, derived from experience in its use in TCDP and at unit simulation centers. The list is by no means exhaustive, since the inherent flexibility of **Janus** makes it adaptable to a broad range of applications, limited only by requirements and imagination. Further development of **Janus** is ongoing, with future versions expected to expand its utility beyond its already considerable training value.

THE JANUS SIMULATION

Janus is technically described as a two-sided, interactive, closed, stochastic ground combat simulation. This means that it allows the planning and execution of tactical operations by two independent players, representing friendly and enemy forces, neither having knowledge of his opponent's intentions or actions beyond that provided in the tactical scenario or discovered in the course of the simulation run. It allows real time

resolution of combat with live interaction between opponents, using realistic systems capabilities and limitations. Probability and the proverbial "fog of war" effect results, yielding realistic battle outcomes that are highly acceptable to training audiences.

Janus employs an extensive, user-definable data base to establish the characteristics and performance of all the weapons and systems played in the

simulation. Symbols for new systems can be prepared quickly, using a drawing program integral to the simulation. Development of new systems or weapons, or modifications to existing ones, can be done quickly and read into existing scenarios with ease. Task organization for tactical scenarios is a straightforward combination of a user-input force list and graphic positioning of unit symbols, or icons, on the simulation screen.

Janus uses Defense Mapping Agency (DMA) digitized terrain data and includes a terrain editor module which permits users to modify terrain and add various natural and man-made features to produce desired tactical circumstances for training. Any area of the world for which DMA has digitized data can be made into a **Janus** terrain file.

The current **Janus** Version, v.5.1, includes polygonal terrain depiction, multiple vegetation types, various trafficability characteristics, multiple road and river types, and a Military Operations in Urban Terrain (MOUT) capability. It also includes a new capability to allow for direct fire fratricide if desired by the user.

Janus was initially developed by the Lawrence Livermore National Laboratory as a nuclear weapons effects model. It has evolved from those beginnings to become a highly effective, high-resolution tactical combat model used by both the training and combat developments communities. The variant now being distributed to the Army was developed by the TRADOC Analysis Center, White Sands Missile Range (TRAC-WSMR). They continue to provide post-development software support (PDSS) to the analytical community, while the Communications Electronic Command, White Sands Missile Range (CECOM-WSMR) provides PDSS to training users. A Configuration Control Board, chaired by the CG, Simulation, Training and

Instrumentation Command (STRICOM), and including the Directors of TRAC and the National Simulation Center (NSC), guides efforts to improve **Janus** in response to new technology and user requirements.

Janus is written in FORTRAN, and while earlier versions ran only on VAX computers and Tektronix color graphic workstations, the current training version is UNIX based. Hewlett-Packard 715-50 computers are used to many training sites, with other sites operating on Sun Workstations. Combat development versions of **Janus** operate on a number of different platforms, according to site specific requirements. This equipment provides significantly greater speed and flexibility than the older systems. The new equipment has so far proven to be powerful and reliable, and provides an excellent working environment for **Janus** users.

Units in **Janus** are depicted on the screen as line drawings of equipment or individual soldiers, with each representing from one to fifteen individual items. The data base gives each system dimensions, movement capabilities, weapons, ammunition, fuel, target acquisition capabilities, and vulnerability characteristics which model those of the actual systems. The terrain realistically effects movement, target acquisition, and direct fire.

Up to 24 workstations, with two interactors per workstation, may play in a **Janus** simulation run, divided between blue and red forces as desired. One workstation may also be brought up as an observer or "see all" station, with the capability to observe, but not control, both competing sides. Forces in **Janus** are distributed among workstations by task organization, and, except for the observer station, each screen displays only those forces controlled from that workstation. Forces may be easily transferred from workstation to workstation either during planning or during the course of a simulation run. As

contact is made with enemy forces, each workstation displays only those enemy elements detected by the friendly forces controlled by that workstation. Properly controlled, this results in a realistic requirement for reporting and analysis of tactical information.

Combat actions in **Janus** are directed by user-input commands employing a menu-driven graphic user interface. Users input movement routes, fields of view, and other commands, while target acquisition, direct fire events, and combat results are determined automatically based on the data base and on parameters established by the user for specific simulation runs. **Janus** can be controlled by a relatively small number of specially qualified personnel, and requires only limited space.

Janus is a "user friendly" simulation, with a high degree of flexibility and adaptability to various training applications. While basic user skills can be learned fairly quickly, the sophistication of **Janus** requires a degree of advanced expertise to gain full training value. The recommended minimum personnel requirement for a **Janus** facility is a system manager to operate and maintain the computer systems, a data base manager, and one or more **Janus** operations specialists, depending on the specific application. In an ideal situation, there should be sufficient full time qualified **Janus** interactors available to operate each workstation in a simulation run. It is also essential that provision be made for **Janus** qualified OPFOR personnel in order to assure execution of a realistic and challenging OPFOR tactical plan.

TRAINING WITH JANUS

This section outlines some of the most important training characteristics of **Janus** and several potential training applications for it. These have been developed based on experience with **Janus** in the Tactical Commanders Development Program at Ft. Leavenworth, KS, the III Corps Battle Simulation Center, and at simulation centers in Korea and Europe. These are by no means all inclusive. **Janus** is an exceptionally flexible tool, with uses that are limited only by the imagination and initiative of the user.

Janus is a member of the Army's Family of Simulations (FAMSIM), designated as a high resolution tactical simulation for battle focus and leader development training. In addition, it has proven to be a valuable tool for certain aspects of tactical training at the battalion and brigade level as a complement to the Brigade-Battalion

Simulation (BBS). Some specific strengths of **Janus** center on battle synchronization, the mastery of time-distance relationships, and high resolution interactions between the various battlefield operating systems (BOS).

In employing **Janus**, it is essential that the user have a clear set of tasks, conditions, and standards developed prior to beginning to plan a specific training program. This helps to insure that **Janus** is the correct simulation for the purpose, and enables trainers to tailor the data base and scenario(s) to meet the stated requirements. Once these have been established, a clear set of data base requirements should be specified, insuring all required weapons and systems have been developed and tested. Development and organization of the force lists for both sides can then be

accomplished, and initial force dispositions made. Whenever possible, a test or rehearsal of the tactical scenario should be run prior to the actual training session, using personnel other than the actual training audience. This permits verification that the scenario will accomplish the desired training goal, and helps to identify actual or potential problem areas for the live run.

Overall control of a **Janus** simulation run should be exercised by the senior trainer, to insure positive coordination and achieve maximum training value. Depending on the specific facility and application, the training audience may either work at the **Janus** screens, or nearby with communications to the **Janus** interactors for orders and reporting.

Experience has shown that **Janus** has an excellent ability to gain and maintain training audience attention and to achieve learning objectives quickly and effectively. Its high resolution graphics, depicting actual items of equipment rather than simple map symbols, and its clear map-like depiction of terrain are easily understood and free of distracting clutter. The depiction of combat events in **Janus** is clear and dynamic, encouraging active involvement. Visual feedback from tactical courses of action is immediate, as is the impact of altering aspects of tactical organizations or plans. Terrain effects on combat are readily apparent, and the "battlefield overview" nature of the **Janus** display clearly depicts the impact that actions of individuals and small units have on an entire force. Leaders using **Janus** rapidly become involved in the planning and execution of tactical actions, becoming part of the training process rather than simply a "training audience". This active aspect enhances rapid achievement of training goals, and leads naturally into the field training environment.

In addition, the **Janus** Analyst Workstation (**JAWS**) allows each step of

a battle to be replayed and examined in detail, showing exactly what happened by time, and why. **JAWS** can clearly illustrate the impact of good planning and synchronization, and can be used to isolate events for discussion in support of specific training objectives. **JAWS** can be displayed at the workstation or on a large projection screen, and can make a substantial contribution to the effectiveness of training by allowing the senior trainer to identify and concentrate on maintaining strengths and correcting weaknesses in performance.

Janus has an exceptional degree of flexibility and adaptability that allows it to be applied to virtually any tactical training requirement. The results of planning and leadership actions are presented realistically in a way which can be used to reinforce training. **Janus** also adapts easily to training schedules and time constraints, with features that permit expeditious set-up of scenarios or saving a scenario at any point in the action. A **Janus** scenario can be repeated, paused, saved during execution, or branched at any point. This allows specific actions to be re-run with changes in positioning, task organization, scheme of maneuver, fire support planning, or any other aspect of tactical action. Subordinate leaders can evaluate different approaches to their individual and unit tasks, and see the impact each has on overall performance.

This "war-gaming" capability contributes directly to team building, understanding the interaction of the various battlefield operating systems, understanding of terrain effects in combat, or to virtually any other aspect of the planning and execution of tactical combat. **Janus** has the capability to display doctrinally correct operational graphics in support of training, so that lessons learned from **Janus** translate easily from simulation to tactical map.

The inherent configuration flexibility of **Janus** allows trainers to

tailor instruction to virtually any level force. Users may be distributed among workstations in any combination desired. Since each sees and controls only those forces under his direct control, each must not only fully think through his actions, but also must keep other users and commanders informed of his situation. Forces may be transferred from workstation to workstation, permitting realistic changes in task organization, and requiring proper coordination be taken to bring new forces under control. These features permit **Janus** to replicate many of the C2 requirements of actual combat.

Janus's high degree of realism enables it to be used not only for individual leader training, but also as a means to prepare for and enhance field training. Planned tactical actions can be rehearsed using the simulation before field deployment, insuring that each subordinate leader fully understands his missions, and how his actions will interact with those of other units. This frees scarce field training time for actual maneuver, and is an effective method of insuring the commander's training intent is understood clearly. **Janus** also provides a means for sustainment training by allowing leaders to examine and improve their individual and unit actions based on the results of actual field training.

TASK FORCE TRAINING CONCEPT

In task force training with **Janus**, the battalion commander is the master trainer. He sets training objectives, and oversees the entire process. **Janus** allows him to monitor each step of training, identifying strengths and weaknesses early on. It also allows the commander to structure training according to his specific requirements, and to include not only his own battalion, but also attached and supporting forces which would be included in a full task force structure. If

actual additional units are unavailable, they can easily be role-played.

One concept for task force training with **Janus** envisions a building block approach, starting at the lowest tactical level and proceeding through the full task force. At each level, scenarios are built to address specific METL and METL-supporting training requirements, and which allow leaders and units to progress logically from performance of simple, individual tasks through the integration of all BOS actions required to accomplish the task force mission. **Janus** training by itself is not sufficient, however. Methods such as tactical exercises without troops (TEWT) are highly effective when used in conjunction with **Janus**, particularly when the **Janus** terrain used is the terrain where the TEWT is conducted. This allows detailed examination of the lessons taken from **Janus**, stimulates discussion, and synergistically increases the value of both **Janus** training and the TEWT.

An example of task force training using **Janus** begins at the platoon level, with each squad leader and each attached or supporting leader at a separate **Janus** workstation, controlling his forces. The platoon leader may operate from a separate workstation during the preparatory phase, or may move between subordinate leaders as he would in an actual tactical situation, checking force positioning, fields of fire, and understanding of tactical plans. During **Janus** runs, the platoon leader operates from a simulated command post using a tactical map or sketch, receiving situation and spot reports from his subordinates using proper communications procedures either on an actual radio net or on a closed circuit communications system replicating tactical radios.

Repeated **Janus** runs allow training to begin at the lowest level, looking at proper positioning of troops and weapons, and proceed through integration of barrier plans, fire plans,

smoke plans and finally to maneuver both within and outside a position. Each step builds on lessons learned in the previous step, and the benefits of good planning and execution are clearly shown at each level. A similar approach is applied at company level, with platoon leaders at the **Janus** workstations and the company commander controlling their actions, and at the task force level with company team and supporting unit commanders at the workstations while the task force commander exercises tactical command from a simulated task force command post.

As a task force training tool, **Janus** offers a number of significant advantages. Accurate, flexible and easy

to use, it bridges the gap between classroom or map-based tactical training and full up field training. Task force leaders at every level train on their individual tasks, but in the overall task force context. The high resolution capabilities of **Janus** are ideally suited for development of tactical skills, and mesh well with other training simulations and methods. By allowing trainers to go from mission guidance, through tactical planning and decisionmaking, on to plan execution, and then to analysis of the battle **Janus** makes tactical training a seamless whole to a degree not achieved by other methods, and achieves substantial gains in training at moderate cost.

OTHER TRAINING APPLICATIONS

FOREIGN TACTICS TRAINING

The high resolution **Janus** display, coupled with its flexible graphics control interface and readily adaptable data base, makes it an ideal tool for support of instruction on foreign tactical doctrine and techniques. **Janus** has been effectively used for instruction on foreign tactics in the Tactical Commanders Development Course at Ft. Leavenworth, KS. **Janus** scenarios can be easily developed to portray non-US organizations, formations, maneuver schemes, fire support methods, phasing of operations, fire planning, control measures, barrier planning and many other aspects of tactical combat. **Janus** provides the capability to dynamically demonstrate unique features of other armies' doctrine and methods. A **Janus** presentation holds student attention as static charts or sand tables often do not. By showing tactical methods over time, **Janus** helps students to gain a degree of understanding of foreign methods that traditional teaching tools cannot achieve.

Foreign tactics training using **Janus** can begin at the lowest tactical level, demonstrating small unit organizations, equipment and methods. Follow-on instruction would proceed in stages, portraying successively larger units, and building on understanding gained at each preceding level. **Janus** scenarios displaying virtually any tactical formation or situation could be prepared in advance and run to illustrate how a particular tactical approach would actually be applied in the field. Scenarios can be stopped in progress to point out specific features, and then continued to allow the training audience to see the entire development of a situation. Coupled with structured narration, this approach provides a degree of understanding of foreign tactics not achievable by conventional instructional methods.

This approach to training on foreign tactics also offers training audiences the opportunity to put themselves in the other side's shoes. By employing foreign doctrine and methods to plan, lay out, and execute tactical

operations in **Janus**, users can gain a substantial degree of practical understanding of the strengths, weaknesses and significance of foreign methods. When applied to the study of potential opponents, this can contribute both to analysis of opposing courses of action and to choose the best friendly course of action. If used for familiarization with the methods of allies, it assists in planning for coordination and synchronization of combined actions.

MILITARY HISTORY INSTRUCTION

Janus offers the opportunity to replay historical battles and to demonstrate visually the tactical formations and methods of armies from history. By development of appropriate data bases and symbol files, battles from almost any historical period since the introduction of firearms can be portrayed, showing the impact of evolving tactical methods, weapons ranges, and organizations. Scenarios can be developed for either accurate recreation of specific battles, or for "what if" use to explore the potential impact of different command decisions or other factors.

Military history instructors can couple lecture or discussion classes with graphic replays clearly illustrating specific teaching points. Students engaged in individual or group research can combine their traditional presentations with development of **Janus** scenarios focused on their specific subjects of interest. This places the student in the shoes of the historical commander(s) involved, and encourages development of a clearer understanding of the influences leading to particular decisions. **Janus** is not a time machine, but the prospect of being able to replay events such as the defense of Little Round Top at Gettysburg or the struggle for La Haye Sainte at Waterloo can bring

them to life in a way not previously possible in the classroom.

ANALYSIS OF TACTICS

As demonstrated in the Persian Gulf, military technology is developing at an exceptionally rapid pace. As the impact of this becomes clearer, potential adversaries are devoting great effort to the development of methods and tactics to deal with change. In many cases, information on evolving tactical thinking is available in publications or from the results of exercises. **Janus** offers the opportunity to explore the strengths and weaknesses of developing foreign tactical doctrine and methods. This is not an analytical effort in the traditional sense, but a method for examination of broader, less quantifiable aspects of tactics such as implications for command and control systems, organizational strengths and weaknesses, and many other factors.

TACTICAL REHEARSALS

In today's circumstances, training time and space are scarce commodities. Costs for training will continue to climb, while the necessity for maintaining a trained and ready force will remain a primary imperative. This places a premium on making the best and most efficient use of available field training time. **Janus** offers a particularly useful tool for insuring that time spent in the field is effectively used. By employing **Janus** as a planning and rehearsal tool prior to field deployment, units can work out in advance many of the teething problems inherent in tactical training. Plans can be built step by step, and worked out in detail with each leader in the chain of command. Commanders can illustrate their guidance and intent, and insure clear understanding each step of the way.

By the use of tailored scenarios, wargaming can be made clearer and the implications of specific decisions or instructions will be understood by all

concerned. Since **Janus** scenarios can be halted and stored in progress, rehearsals can even be conducted in steps over time, enabling commanders to make use of scheduling opportunities which might otherwise be too short to be usable.

The ability of **Janus** to run at greater than real time allows units to conduct multiple interactions of rehearsals in relatively short periods. This enables examination of various planning options and contingencies and contributes substantially to achieving the maximum training value from time actually spent in the field.

CONCLUSION

Janus is one of the U.S. Army's newest tactical training tools, and one of the most flexible. Its ability to clearly and realistically portray tactical combat, along with its inherent flexibility, offer many opportunities for commanders and staffs to improve their skills in increasingly complex modern combat. The potential is high for **Janus** to contribute significantly to maintaining the mastery of the battlefield demonstrated so strikingly in Operation Desert Storm.

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John Reichley, a retired Army Officer and Army civilian employee since 1984, was the luncheon speaker on October 11th, 1995. His extemporaneous presentation follows:

I have been at CGSC on active duty or as a civilian since 1978, and have long been an observer and chronicler of staff, faculty, and student "foibles."

My first tale is of a CGSC student who dressed in a chemical protection rubber oversuit called MOPP (mission oriented protective posture) and was standing in front of the classroom when a class on chemical warfare began. When the student began to move around the room, needless to say the instructor lost control of the class.

There was another instructor, new to the faculty, who had been forewarned that "seasoned" instructors would try to get him rattled during one of his first classes. Sure enough, while he was explaining information on visual transparencies (VGTS), a student in the back row collapsed. The instructor continued. Other students laid the stricken one on the floor and a student left the room. Quite an elaborate ruse, the instructor thought. Soon two soldiers in white coats and a stretcher came in and removed the stricken student. The instructor was more determined than ever to continue. He finished the class. Only later did he learn that the student had suffered an apparent heart attack and had been rushed to the emergency room. From then on when a student so much as dropped a pencil, the instructor stopped the class.

A Turkish student and his wife had one car, a 1980 white Chevette. One day the wife told her husband she needed the car the next day and for him to ride with a friend. A block away, a man discovered that his 1980 white Chevette needed new brakes. He was going out of town and called a garage to come pick the car up and fix it while he was gone. The Turkish student was picked up at 7:30 and at 8:00 a wrecker arrived--in the wrong block--and hauled off the Turk's car. At 8:30, the wife went to get in the car. It was gone and she thought her husband had taken it. She called Bell Hall and had him gotten out of class. He said he didn't have the car and notified the police. A few days later the man returned to find his car in front of his house. Great service he thought. They take it away, fix it, and bring it back. He got in it to run an errand, came to a

stop sign, hit the brakes, and went right through the intersection. He called the garage the next morning and eventually everything got sorted out. Never did hear who paid for the Turk's car's brakes.

A German student was a licensed hunter in Germany and wanted to shoot a goose. (He went hunting almost every morning during the season, but didn't get one. One morning, riding his bicycle to class, a large goose appeared in his path. He tried to avoid it, but an over its neck and killed it. He put it in a dumpster until he got out of class, but it was the day that dumpster was dumped and it was gone.

On the Saturday morning of a food fair some Kenyans went to the officers' club to borrow a large pan. They said they wanted to cook a goat. The club sergeant had visions of a live goat in their BOQ room and went with them to help. The goat was butchered and dressed, but too large. A Kenyan cut it in half with a machete, the sergeant cooked it, and lots of folks enjoyed "goat a la Kenya."

A student from Taiwan was stopped by an MP near the fort's front gate. The student appeared not to understand the MP. I knew the student and started to turn around to assist him, then remembered he spoke English as well as I do. I saw him in Bell Hall later and asked if he'd gotten a ticket. He smiled and said no, that he pretended to not understand the MP, who soon gave up in frustration and let the Taiwanese go. I told that story to two Burmese students soon after they arrived. Shortly before they left the next year, one of them said he wanted to thank me for saving him money. I asked what he meant, and he said he'd been stopped, pretended not to understand, and the MP had let him go also. I don't tell that story to foreign students anymore!

COPYRIGHT FOR LIBRARIANS IN ELECTRONIC MEDIA

I. BASICS

A. What it is: Constitution; Who it's for; How Long it Lasts; What Happens When Term is Finished

I will begin with some basic information on copyright and the librarian's relationship to copyright. Copyright begins at the constitution: Art. 1, section 8, clause 8, gives Congress the right to promote the progress of science and the useful arts by giving authors and inventors exclusive rights to their writings and discoveries for limited times.

Copyright has two groups of beneficiaries. Society as a whole is the primary beneficiary, because authors receive exclusive rights to be sure that they are encouraged to make their information and entertainment products available for posterity. So librarians and educators represent the primary beneficiaries of copyright, according to the Constitution, and the authors get a limited time to enjoy the economic value of their works. After that limited time, lasting for the life of the author plus 50 years, the authors' work goes into the public domain. The certain limited time for which authors are protected may get longer, if Congress extends the term to life plus 70, as the European Union countries have done.

Public domain means material that the public is free to use without permission or payment to anyone. Some material in the public domain is that on which the copyright has expired, materials in which the author never claimed copyright, i.e. dedicated to the public, and materials produced by the federal government, according to section 105 of the copyright law. Also, material not originated by an identifiable author -- that which is too common, or simple to be taken away from the public -- like a five pointed star, short phrases such as "the copyright law," or "I love you," is not protected by copyright.

B. Works Covered

First, however, what is copyright and what does it cover?

1. Section 102 Works

Copyright is a bundle of rights given to the author so that he can authorize use of his works. Originality and creativity are prerequisites for all copyright subject matter. Originality means that the author originated the

work and did not copy it from another work. Creativity is intellectual labor as reflected in a work. It means that the author has met the minimum requirement for creating an intellectual product.

2. Eight types of works are covered: literary works, including computer programs, musical works (classical as well as rap), dramatic works, motion pictures and other audiovisual works, sound recordings, choreography, pictorial, graphic and sculptural works, and finally architecture, as of 1990.

3. **Derivative Works and Compilations**

In addition to these eight classes of works, the law protects derivative works, that is, adaptations of works that have something new added to them and compilations, a selection or arrangement of items in a creative way.

C. Rights of Authors

1. Copyright: Section 106 Rights

The rights that an author, the creator of the work receives are five:

- a. the right to reproduce - thus the word "copy" - "right"
- b. the right to distribute a work publicly - that's really a publishing right
- c. the right to make a derivative work -- a new version of something
- d. the right of public performance; or the right to render a work in public.
- e. the right of public display, such as to display from an application program on a computer screen.

2. Moral Rights.

There is another type of right that is given to works of fine art, to be specific, moral rights. United States law has two moral rights: (1) the right to have the authors name appear on his or her work, called the right of attribution, and (2) right not to have the author's work mutilated, or

chopped up in little parts and sold piece by piece -- called the right of integrity.

Driven by the philosophy of the Berne Convention, which the United States joined in 1989) Congress provided narrow rights, dealing with only pictures, sculptures, drawings and exhibition photographs issued in numbered and signed copies of 200 or fewer.

D. Section 107 Limitations -- Fair Use

The Copyright law "giveth" in §106 and the copyright law "taketh away" in §§107-120, remembering that the prime beneficiaries of copyright are the public. So the exclusive rights have enumerated non-exclusive features in those sections that follow the rights section, section 106.

Section 107 of the law is the educational use section. It is also the section that spells out the general public's permitted use for essentially noncommercial activities. This "Fair Use" section says that a certain amount of reproduction can be done without permission of the copyright owner -- If it conforms to these four guidelines.

- (1) The purpose and character of use: commercial or nonprofit
- (2) The nature the copyrighted work: informational or entertainment
- (3) The amount and substantiality of the use (how much was copied and how important a part was it)

The most significant factor, many say, is

- (4) the effect on the potential or actual market for or value of the work.

All of these factors have to be weighed by a court. So the problem is that short of an agreement with the user, no one can definitively say what fair use is in many fact specific cases until the matter is so decided. For the reason that not every matter rises to economic significance such that it should be brought to a court, copyright owners and library representatives have negotiated certain guidelines to reflect a minimum baseline level although more copying than that permitted by the guidelines may also constitute fair use. (See Circular 21.)

1. For teachers.

Specific guidelines for multiple and single copying; copies are not to be archived from semester to semester.

- spontaneity, brevity necessary.
- copies should bear a notice of copyright
- Music Guidelines -- no consumables, no copying for performance, limited adaptation rights, copies--can be kept by students.
- Off Air Taping Guidelines can show twice over ten day period; can keep for 35 more days to evaluate for decision on purchasing or licensing.

2. General Users

The courts also use fair use to balance freedom of speech or censorship issues, like the recent Scientology case (where the suspicion is that suit is being brought as a reprisal against disclosure of the content), and the Supreme Court's Acuff Rose v. 2 Live Crew decision in 1994 (where the suspicion is that the song was used for a rap version).

E. Section 108 Limitations

What is relationship between §107 and 108. 108 is for library reproduction; how does that relate to the library community?

1. Teacher/Library Reserve Guidelines.

Singles:

- one copy per student
- copyright notice on work
- no fee to student beyond actual cost of photocopying

Multiples:

- Faculty members may have a reasonable amount of multiple copies made
- notice of copyright on copies
- Library should own a copy of the work photocopied.

All copying should be isolated and unrelated

- not where reproduction of multiple copies is concerted
- not where systematic reproduction takes place.

2. Military libraries. When the Copyright Office published its first photocopying report in 1983; military libraries asked about the condition that they had to be open to the researching public, section 108(a). There was concern about special researchers having difficulty gaining access to military libraries. This would mean that those libraries would not qualify for the 108 exemption. The Office did not recommend to Congress that it change the law, but rather suggested that military libraries make it very clear, preferably in writing, what the procedures are for obtaining access to its facility rather than requiring persistence on the part the special researcher.

3. Section 108 has eight subsections and are in your booklet. It is important to remember that Section 108 is generally refers to single copies. Under Section 107, a teacher can make multiple copies under certain conditions.

F. From Formalities or Inadvertent Loss of Copyright to U.S. Adherence to the Berne Convention

The American copyright law has moved from strict formalities to Berne standards. This means protection has moved away from the requirement to follow the formalities of copyright strictly or automatically lose copyright of pre-1978 days. Some formalities are requirements to place a notice of copyright on each published work, and the requirement to register and deposit each copyrighted work in the Library of Congress. Formalities have been made less strict because intellectual property is becoming more and more a major issue in America's attempt to obtain a favorable balance of trade. On the one hand, there's the proprietor's interest in protecting copyright in an age of electronic dissemination of bits, and on the other hand, there's the library's goal to disseminate information in a tradition of free access to works.

The copyright proprietor's outlook for not inadvertently losing copyright gained measurably with the entry of the U.S. into the Berne Union. First the authors received automatic copyright in 1978; no longer did authors have to comply with certain formalities before being granted a copyright. Then they received a longer and more secure term of copyright. No longer can the author lose copyright when he or she doesn't put a copyright notice on the published work.

A copyright owner still can face penalties if he doesn't deposit for the Library (if the collections can use the copy) but the dramatic consequences of losing copyright is no longer a problem.

G. Benefits of Registration

A copyright owner can lose other valuable benefits if he or she doesn't register, but still has automatic copyright from the moment she has taken her hand from the recorder, or lifts the pen from the paper, or the paint brush from the canvas.

What this means is that many more works are copyrightable these days than before the U.S. joined the Berne Convention. Even more are copyrightable after the North American Free Trade Agreement (NAFTA) and the GATT, or the Uruguay Round Agreements Act (URAA). The major legal benefits of copyright still take place through registration. An American author can't sue in court unless registration has taken place. And no one can have his costs and attorney's fees paid by the losing party, nor receive judge-determined (named statutory) damages regardless of whether actual damages can be proved, unless the work has been registered before infringement. That's a very important incentive to register in timely fashion. That's also a good reason to get permission from the copyright owner or conduct a search in the Copyright Office for the owner when contemplating using a work clearly outside the bounds of library reproduction provisions or those for fair use.

H. Remedies for Copyright Owners

When a researcher, commercial information service, or a library or teacher uses a work in a way that is not permitted by copyright law, of the work is copyrighted -- hasn't expired, isn't de minimis (too simple to be copyrighted or is common property, wasn't published without notice before 1989) that person may be an infringer of copyright.

1. Civil remedies range from one's own attorney's fees and nothing else, under a special provision for librarians and teachers to \$250,000 for criminal infringement.

a. Injunction. Most often a copyright owner who can provide infringement can get an injunction -- a court order to cease and desist on pain of contempt of court. There may be a temporary injunction or a permanent injunction. Often, an injunction is the end of an action, since the parties can see the inclination of the court -- how a court may rule.

b. Attorney's fees. I singled out attorney's fees because they're no small matter. Often this is the difference between bringing or not bringing a suit. If a registration has been made before infringement (or within the three months grace paid of first publication), or prevailing party can have its attorneys fees paid by the other side.

c. Damages. A person can be ordered to pay actual damages and profits, depending on the harm. Or the prevailing party may choose to ask for statutory damages if damages are difficult to prove. Civil statutory damages range from \$500 to \$100,000 for willful infringement.

2. Criminal penalties include impounding, destruction, penalties of up to \$250,000 and prison terms of up to five years.

II. NII WHITE PAPER

A. Purpose and Participants

The White Paper is the result of the deliberation over the last two years on Intellectual Property and the National Information Infrastructure (NII). While the report states its charge broadly to encompass trademarks and patents, the other two subjects of intellectual property, the report is mainly about copyright. President Clinton's Working Group on the NII was fortunate to have a number of government copyright experts, Bruce Lehman, the Patent and Trademark Commissioner, in the Executive Branch, and Marybeth Peters, the Register of Copyrights, in the Legislative Branch, as well as representatives from other agencies and many representatives from private industry.

B. Conclusions

The report summarizes and analyzes the copyright implications of the NII. For copies, you can call 703 305-8341.

Even though the subject matter is technically difficult, the Report describes the copyright law concisely and understandably. Actually the report is an important primer on the copyright law in general and as it relates to the NII. It was clear that major changes to be copyright were not in the offing, but piecemeal legislation representing minimal changes was the preference.

The Register of Copyrights believes that market conditions are unable to predict with certainty just how effective and efficient licensing systems will develop. She believes that a period of experimentation is necessary to test various mechanisms and models. Copyright management systems can be the key to future tracking of ownership and collective administration.

The primary concerns of the NII were to:

- make transmission distribution if hard copies or all the attributes of a work are delivered
- give sound recordings performance rights for digital transmissions
- exempt Libraries so that they can make digital copies for circulation, and preservation.

- exempt nonprofit organizations to make copies for visually impaired in a variety of forms, for example, large type, Braille, talking books, etc., where, after a year, the copyright owner does not enter the market.

C. Proposed Legislation -- an NII Bill:

The bill deals with four major areas

1. transmission of copies

Here the proposed legislation makes clear that the right of public distribution includes the right of transmission to the public of copies and phonorecords. So transmission of a computer program from one computer to another would require the copyright owner.

2. exemptions for libraries and the visually impaired

- a. would allow the preparation of three copies of works in digital format
- b. would allow the making of a limited number of digital copies for preservation

3. copyright protection systems

- a. would prohibit the importation, manufacture or systems or services that deactivate copyright protection systems.
- b. civil penalties provided -- including costs and attorney's fees.

4. copyright management systems

- a. prohibits the dissemination of false copyright management information (copyright owner, title, address, etc.).
- b. prohibits the removal of such information
- c. provides both civil and criminal penalties for such activities.

(1) fines of up to \$500,000 dollars

(2) prison terms of up to five years

III. RECENT CHANGES IN COPYRIGHT LAW AS IT RELATES TO ELECTRONIC MEDIA

A. Audio Home Recording Act

You remember the Supreme Court case back in 1984 that said home taping of broadcast television is fair use, assuming that home taping is for later viewing, called time shifting, and not building up a collection, called librarying.

This is the ^{act} that Betamax created. A great deal of ink has been spilled, and a four in a half feet of space in my office is dedicated to this Act. The law is the first to address compensation of authors in the technological revolution. Parties who could not compromise reached an agreement on two solutions. The fact is that it has yet to pay off because funds have been eaten up by wrangling about who gets what; does not diminish the fact that at least solid groundwork has been laid.

The AHRA allows home taping on digital audio recording technology without any infringement on the part of manufacturers of the digital equipment. This is a major concession for manufacturers were being sued by composers.

^{who} Manufacturers pay a small royalty -- two percent of the cost of the digital audio recording machine -- DATs and MiniDisc and Digital Compact Cassette machines and 3% of the cost of the cassettes or minidisks. The consumer pays nothing directly, and the manufacturers may decide to absorb the cost, rather than pass it on.

Secondly, the machine has technology imbedded in them, that prevent the copying of a digital copy itself. Original CDs or MiniDiscs can be copied endlessly on these new machines. Copies of CD-s and DATs though cannot be copied. This is called the serial copy management system, that all DATs and MINIDiscs have.

The royalty pool, to be paid to performers, composers, record company comes to about \$600,000 at this time. It is to be divided six ways, with composers and publishers receiving ^{on} a third of each dollar, featured performers, about a fourth, nonfeatured performers get an honorarium of less than two percent and record companies get the rest.

The money is to be distributed according to sales and public performance, with the fees for administration by the Copyright Office coming out of the royalty pool. We take in the money and the Librarian appoints arbitration panels to distribute the royalties. For the reason that it takes a great deal to begin collection and distribution mechanisms, artists are averaging about \$436 each for 1992 to 1993. Payments to artists for 1994 will total about \$350,000. You can be sure that the parties are going to work very hard in the future to increase their profit margin.

B. Software and Record Commercial Lending Right

1. Software. Software may not be lent. Even though it is purchased outright, for commercial purposes, except for libraries. Nonprofit libraries are exempt from this prohibition, but libraries must include a copyright warning on all the copies that they lend. The copyright warning is specified in the Federal Regulations, at 37 C.F.R. 201.24. The regulation provides:

NOTICE WARNING CONCERNING COPYRIGHT RESTRICTIONS

The copyright law of the United States (Title 17, United States Code) governs the reproduction, distribution, adaptation, public performance, and public display of copyrighted material.

Under certain conditions specified in law, nonprofit libraries are authorized to lend, lease, or rent copies of computer programs to patrons on a nonprofit basis and for nonprofit purposes. Any person who makes an unauthorized copy or adaptation of the computer program, or redistributes the loan copy, or publicly performs or displays the computer program, except as permitted by title 17 of the United States Code, may be liable for copyright infringement.

This institution reserves the right to refuse to fulfill a loan request, if, in its judgment, fulfillment of the request would lead to violation of the copyright law.

The regulations require verbatim reproduction of the notice, and is placed on the package that contains the copy of the computer program it should be clearly legible, comprehensible, and readily apparent to a casual user of the program.

The Computer Program Rental Right was to sunset in 1997, however, the Uruguay Round Amendments Act (URAA) made the prohibition against commercial lending permanent.

2. Record Rental. In addition to software, records may not be commercially leased, even though records are sold outright. Consider that when a book is purchased, the buyer can do anything she wishes with that physical book sell it, rent it, give it away according to section 109 of the copyright act, another limitation on the copyright owners rights. An exemption to that limitation was made for software and records, so they cannot be lent for commercial purposes. This was the first law that Betamax wrought -- record companies said that even though movies might be rented for one time viewing, records are rented for home copying. So to prevent displacement of records sales, Congress enacted a temporary ban on commercial rental, and made it permanent in the NAFTA legislation. But again, libraries may continue to rent or lend records, but need to carry a copyright notice on the lending copies.

C. Civil and Criminal Penalties for Bootlegging Recordings and Music Videos

The NAFTA and GATT (URAA) Acts are about trade balances -- increasing our exports and making deals to do so while other countries get similar opportunities to increase their exports. The NAFTA legislation was enacted on December 8, 1993 and exactly one year later the URAA legislation also became law. The URAA legislation is huge -- shoes, textiles, agricultural products etc., are covered. Part of it was copyright, included in the Trade Related Intellectual Property Agreement. With intellectual property -- patents, copyrights, and trademarks, contributing so heavily to our balance of trade, copyright matters fit right in with current national priorities.

In addition to lifting the sunset on Software Rental to the effect that the prohibition on commercial rental of software is permanent now, the URAA prohibits the making of audio recordings or music videos of live musical performances. This law gives federal copyright remedies to some works that have yet to become federal copyrights. Before federal copyright can attach, there has to be a fixed or physical item embodying the work, even if it is fixed in the memory of a computer chip. That's physical enough. The URAA assimilates bootleg recordings and music video to fixed works so that civil or criminal offenses can arise under the Copyright Act from bootlegging live musical performances.

IV. UNFINISHED BUSINESS:

What is the Copyright Office's Role in the Information Highway?

A. The Copyright Office is a department of the Library of Congress, and one of our functions is to bring in material through the deposit system for use in the LC Collections. The Copyright Office negotiated a license in September 1993 with the Information Industry Association, the National Federation of Abstracting and Information Services, the AAP and various representatives of copyright owners for the deposit of CD-ROMs. The copyright owners had some question whether works in this format were subject to deposit in the Copyright Office, as are all books published in the United States. Pursuant to that negotiated model agreement, the Library of Congress now has 60 plus CD-ROMs agreements for use, royalty free in our collections. The Library of Congress still spends around \$100,000 a year on licensed CD-ROMs, but mandatory deposits supposed the Library's purchases.

B. The Copyright Office is also in the business of promoting copyright awareness, and much of our information is freely available on Internet. In 1990, for the Bicentennial of the Copyright Law, we prepared a short syllabus in conjunction with a calendar for teaching about copyright law in secondary schools. Request a copy from me if you are interested in receiving one.

C. Our role is also to register claims, and the Office will register work electronically as a result of an exciting test that we're doing with six research libraries, including Cornell, the

University of California at Berkeley and the Massachusetts Institute of Technology along with an organization named the Corporation of National Research Initiatives. Paperless registration and deposit will be accomplished by receiving applications and copies in digital form in a secure path on the Internet. This is called CORDS, the Copyright Office registration and deposit system. In addition to registering claims, depositing copies, and recording transfers, CORDS looks forward to being able to offer the copyright owners' terms and conditions for licensing their works online. That way CORDs may eventually be a one-stop shop for access to digitized works that are registered in the Copyright Office. We expect to have our first electronic registration this year.

D. The Office also assists the Library in furthering its effort on the Digital Library Project. The Library is presently disseminating unique materials of the Library of Congress for distance learning. We recently provided multimedia materials to 44 libraries across the nation consisting of turn-of-the-century historicaliana -- political speeches of the early 1900s; an African-American collection of note; film footage from the Tin Pan Alley era. In the course of assisting the Library we determined just how difficult it is to identify the authors and secure permission to use copyrighted materials.

E. The Office will continue as part of the Working Group on the National Information Infrastructure on collective licensing, fair use guidelines--developing answers to real-life scenarios in an electronic environment, as well as developing the Copyright Awareness Campaign.

V. UNFINISHED BUSINESS FOR LIBRARIANS

As the Copyright Office's job is rendering service to its constituency -- the Congress, the general public, authors and copyright owners, a Library has its own mission to serve the public interest, and I suspect it has an unfinished agenda to complete as we do.

In trying to fulfill your unique role, you may view protecting fair use, making sure that some free use can be made of copyrighted materials -- as part of that mission. Librarians may wish to weigh in on whether the public has a right to browse through a database or an application program without liability just as it had a right to read a library book.

Secondly, the Library may deem important preservation of historical materials in an appropriate archival environment, not just currently popular works, but those that may have some undiscovered place in history.

Third, as copyrighted works that receive remuneration beget other works, Librarians must somehow help protect the creative urge to produce copyrighted works. They may want to see themselves as partners with authors in ensuring the ongoing viability of the Constitution-based author incentive system.

James Gunn
English Department
University of Kansas
Lawrence, Kansas 66045

Approximately 4060 words

LIBRARIES IN SCIENCE FICTION: REVISITED

by James Gunn

Librarians and writers have a great deal in common. They both fell in love with books at an early age and they both collect books. The librarians, however, have a place to put them, usually, and a way to locate them when they are wanted, and they are in the business of lending books. Writers know that the book they let someone borrow will be just the book they need tomorrow.

What I want you to understand, however, is what libraries mean to us: they represent that golden age when happiness meant being warm and full, with a good book open in our hands. Or even better, being allowed to roam freely through the stacks of a library and to pick out any book we want and take it to some comfortable room--preferably with a fire in the fireplace--and immerse ourselves in some great adventure.

The most marvelous moments in my childhood were spent with books. In grade school I read my way through a wall of books starting with Andrew Lang's variously colored books of fairy

tales and working my way through Dr. Doolittle and Altsheller's historical romances. My high school had a branch of the city's public library that I explored every afternoon, and I used to pedal a bicycle about five miles to the great stone public library here in Kansas City and return with enough books to last me a week or two--ten or twelve of them at a time.

So I have a great admiration for what you do and a bit of envy as well. It is not surprising that when writers deal with libraries, you always come off pretty well.

I'll share another speculation about writers. Perhaps it is true of librarians as well. Many writers--maybe all writers, but that can't be proved--went through a period in their childhood when their only companions were books. H. G. Wells, for instance, suffered a broken leg and was bedbound for several weeks; his father brought him books. Isaac Asimov was "orphaned" at the age of six by his father's candy store (and later, at the age of nine, put in charge of his younger brother Stanley). I had scarlet fever when I was in kindergarten and missed half a year. Several other science-fiction writers I know had scarlet fever as a child, including Frederik Pohl; I have suggested, only half in jest, that the writing of science fiction was the result of a virus that one catches in childhood.

A few years ago I agreed to collaborate with University of Arizona at Reno librarian Milton Wolf on an article about science fiction for Library Journal. In the article I mentioned that I had compiled a Basic Science Fiction Library, and anyone who wanted a copy could send me a dollar for postage. I got more

than 50 requests. When I mentioned the fact to GraceAnne DeCandido at Library Journal, she asked to publish the list, and did so in splendid fashion in November of 1988.

That article led directly to a couple of lectures involving librarians, one for the annual meeting of Missouri librarians. For that meeting I decided to prepare a talk discussing the images of libraries and librarians in science fiction. Afterwards I offered the talk to Library Journal, but they were in the process of changing editors and it wasn't until GraceAnne DeCandido got the editorship of her own magazine, Wilson Library Bulletin, that I reminded her about the article, and "Dreams Written Out: Libraries in Science Fiction" was published in one of the last issues of the Bulletin before it went electronic. And that led to the invitation to speak to this group. Where will this path take me next?

One announcement that many of you who are interested in science fiction may welcome is that my historical survey of science fiction, The Road to Science Fiction, will be back in print next year from White Wolf, beginning in August. White Wolf will reprint, in trade paperback, the first four volumes and then publish volume #5, The British Way, and volume #6, when it is completed, Around the World.

In putting together volume #5 and volume #6, I have had occasion to compare the American experience of science fiction with that in other countries in greater detail than I did in the first four volumes, and I would like to share a few thoughts with you about this category of fiction that has evolved from a pulp-

generated, minority literature into a omnipresent, majority literature today. What was once, as Damon Knight described it, "the mass medium for the few," read by what now might be called dorks or dweebs, that is, intelligent grade-school and high school students, mostly male and mostly social misfits, has become what everybody has heard of and most people have read. Damon Knight also said that all SF writers began life as toads, and Frederik Pohl responded, "Yes, but some of us get kissed by a princess." All that has changed, and SF is now a majority literature, with implications for what is published as SF and for the society in which it is embedded.

Back in the Golden Age of science fiction, between 1938 and 1950, virtually no SF books were published; in 1993 nearly two thousand SF, fantasy, and horror books were published, and some of them made the bestseller lists. Ten of the top twelve moneymaking films of all time are science fiction, and science-fiction television series are not only popular enough to attract audiences in syndication, producers continue to look for new ideas on which they can hang a series.

What happened? Well, as Asimov once remarked, we are living in a science-fiction world, a world of rocketships and atomic energy and atomic bombs, a world in which the future is more important than the past, a world very much like the one Asimov and his fellow writers were writing about back before World War II. We are living in a world about which the only absolutely accurate statement you can make is "this will change." Science fiction is the literature of change, and we are living in a world

in which tradition offers few answers; the only way to live a reasonable existence is to plan for difference. Traditional fiction has been long been held up by critics and reviewers as reflecting the real world and science fiction has been criticized for being fantasy, but traditional fiction is the literature of continuity, and any fiction that does not include change as a major influence on the behavior and fates of its characters is fantasy. If traditional fiction concerned itself with change it would be science fiction.

So, it makes sense that people, particularly young people, are reading science fiction and watching it in far greater numbers. To be sure, most of what is published and presented visually is adventure or romance or suspense or intrigue or horror in which the originality and substance of the ideas is minimal. Theodore Sturgeon announced Sturgeon's Law more than forty years ago when he said that "ninety per cent of science fiction is crud, but then ninety per cent of everything is crud." Literature should be judged by the ten per cent that rises above the level of mindless consumption. But I would add that even routine adventure SF at least takes place in a changed world, and this fact insinuates itself into the thought processes of readers and viewers and prepares them, as Alvin Toffler wrote in Future Shock, for a world in which change will certainly happen.

One of the consequences of science fiction becoming popular is that picking out the ten percent that isn't crud has become increasingly difficult. Librarians must become increasingly dependent upon reviews. I recommend, however, relying more upon

the reviews in the SF media, by which I mean the review columns in the professional magazines themselves, or in such fan magazines as Locus, Science Fiction Chronicle, Tangent, and others. And, as a guide to the classics, I might add that I have updated "The Basic Science Fiction Library" for the new edition of The Road to Science Fiction.

I'm not knocking adventure science fiction. That's what first attracted me to the literature when I was eight, and I still enjoy a good adventure story. Then, of course, I could get adventure in other forms, particularly the hero-pulp magazines like Doc Savage and The Shadow, but I found that I preferred the adventures that made me think as well. I went on to enjoy the stories that made thinking differently an adventure, and I recommend to you the literature that places a premium on involvement of the mind as well as the glands, that requires readers to figure out the change that has occurred, and leads to contemplation of the impact of change on human beings. That is what science fiction is all about. It is a profoundly revolutionary literature because it asks readers to consider how the status quo could be different, even, sometimes, why it should be different, or even, in the case of dystopias, how we should be careful of the actions that create bad change or irreversible change.

Sometimes governments don't want citizens who think, but in this country, fortunately, we have always valued independence of mind and spirit. That may be one reason science fiction is so peculiarly American and why it exports so well. It is one of our

best products and sells this nation's essential values more successfully than Coca Cola or Hollywood.

Science fiction didn't originate in the United States. It got its start in England and France, perhaps with Mary Shelley and her 1818 novel Frankenstein, and certainly with Jules Verne and his voyages extraordinaires beginning with Journey to the Center of the Earth in 1864, and it got its biggest impetus from the scientific romances of H. G. Wells, particularly from his novels starting with The Time Machine in 1895.

Between Shelley and Verne were some Americans, such as Edgar Allan Poe and Nathaniel Hawthorne, who were writing something like science fiction in the 1830s and 1840s, but, although Poe influenced Verne, it was not these authors who made SF American. Instead, it was an immigrant from Luxembourg, Hugo Gernsback, who founded the first science-fiction magazine, Amazing Stories, in 1926 and provided a focus for science-fiction enthusiasm and a forum in which ideas about change and the future could be debated and the shared concepts that undergird almost all SF could be worked out.

Amazing Stories was followed in 1929 by Science Wonder Stories (soon to be combined with Air Wonder Stories into Wonder Stories), in which Gernsback used the term "science fiction" for the first time, and in 1930 by Astounding Stories of Super Science. Another important step in the Americanization of science fiction was the appointment in 1937 of John W. Campbell, Jr., to the editorship of Astounding Stories, which he would rename Astounding Science Fiction and then Analog. Campbell had

a vision of stories placed in a science-important world, and the way he imparted his vision to writers and got them to contribute those kind of stories to his magazine created what later came to be known as the Golden Age of American SF.

The American science-fiction magazines established the criteria for what SF ought to be. The reason it was accepted not only in this country but elsewhere in the world was that the SF ideas had been so thoroughly worked out in the magazines. In other countries, where SF was the product of isolated authors, individual stories or novels might have flashes of brilliance or moments of insight, or even stunning artistic accomplishment, but they could not match the cumulative evolutionary fitness to survive of the American product.

The second reason for the Americanization of science fiction was the response of western civilization to the transforming power of the Industrial and the Scientific Revolutions. It happened there first, and in the United States, where the frontier had held out for several generations its promise of a new start, a native optimism and an appreciation for the benefits of change created an attitude of hopeful anticipation. Older, more traditional countries, which had seen most ideas given their chance to succeed or fail, and in the end always fail, laced their stories with skepticism. Today, older and wearier, this country ~~made~~^{is} be falling into the same fear of change as the nations to which the Industrial Revolution came as a threat to established cultures.

As I see it, inspecting the SF of other countries, every

nation that encounters the powerful forces of industrialization is going to pass through the same energizing process that the United States went through in the 19th and early 20th centuries, in which people begin to regard technological and scientific change not as a threat to their established ways of life but as opportunity to improve the conditions of human existence. The response may differ according to national temperament and because industrialization, in the age of the Information Revolution, arrives more swiftly and in altered forms, but the basic situation will be the same: science and technology are the instruments of change and science fiction is its literature, dramatizing the consequences of change and human responses to it, and speculating about its direction.

Those of you who are responsible for adding to your library collections might well consider the possibilities of science fiction for entertaining readers in a way that will make them think, at least once in a while, and sometimes in totally unfamiliar and liberating ways. Socrates said that the uninspected life is not worth living; to that I add the corollary that the uninspected opinion is not worth holding. I particularly recommend adding science fiction to overseas collections, particularly those available to foreign readers. There are SF fans everywhere, and science fiction speaks to them as nothing else can. Fred Pohl tells the story about one trip he made through Eastern Europe for the U.S.I.A.: several local citizens came up to him and said that they felt more in common with him than with the people around them. They were citizens of

the science-fiction world.

When I was lecturing in Romania for the U.S.I.A. an engineering professor proudly showed me his collection of science-fiction. It was made up of Xerox copies of books he had checked out of the American Library at the Embassy in Bucharest.

I promised that I would say something about libraries in science fiction. I won't repeat here what I published in Wilson Library Bulletin. You can look it up in the February issue if you're interested. Instead I will offer an overview and some additions that have come in since the article was published. One of the things I have discovered about librarians is that you not only read, you write and do research. At the end of the article I solicited suggestions for additions to the list; the response was surprising. One was from a member of your own military librarians, Gordon Cheatham of Alexandria, Virginia. Another was from J. B. Post, head of the General Information Department at the Free Library of Philadelphia, who not only sent suggestions but put my request on the Internet and got me several more.

It's all pretty wonderful, and I have incorporated their suggestions into the following discussion.

The ways in which libraries have been depicted in science fiction seem to fall into three categories: libraries as metaphors, libraries as sources of power, and libraries as dangers to humanity or to the status quo. The use of the library as metaphor can be found in Jorge Luis Borges' "The Library of Babel," in which the entire universe is one vast library, but Stanislaw Lem also worked at the metaphoric level in "Trurl's

Electronic Bard" and "The Sixth Sally."

Libraries as a source of great power are presented in George R. Stewart's Earth Abides, Walter Miller, Jr.'s A Canticle for Leibowitz, Isaac Asimov's The Foundation Trilogy and "The Last Question," A. E. van Vogt's The World of Null-A, my The Listeners, Robert A. Heinlein's Friday, A. J. Budrys's Michaelmas, and Gordon R. Dickson's The Final Encyclopedia.

Of course tomorrow's libraries are more likely to be electronic, like tomorrow's books if Ben Bova's Cyberbooks is prophetic. We are coming to understand that everything is information, including life itself. Libraries are information selected according to some principle and organized for easy access. Even though some of us may be addicted to information in a particular format, the form that will prevail is the one that stores it most economically and provides access most readily, as long as it does not offend our esthetics, and the last, of course, is subject to change over time. So, in spite of Asimov's encomium to the book--"the minimum technology with the maximum interaction"--the computer is likely to prevail.

But the computer can be a threat. We do not know how sentience occurs in humans, and therefore we cannot know when we may cross the threshold of complexity into sentience in computers, what we have come to call artificial intelligence. And since we do not know from what mixture of physiology and spirit we derive our sense of free will, we cannot know whether an artificial intelligence will develop similar abilities to make decisions on its own. Once that happens some of those decisions

may be dangerous to us or even to our survival, and SF writers have imagined those possibilities for us.

One of the earliest was E. M. Forster's "The Machine Stops," in which the machine corrupts the human spirit. Once computers were invented, the nightmares grew more frequent, as in D. F. Jones's Colossus and Arthur C. Clarke's "The Nine Billion Names of God" and 2001: A Space Odyssey. Fredric Brown's "Answer" imagined a computer god, and Harlan Ellison's "I Have No Mouth, and I Must Scream," an angry computer god. William Gibson's Neuromancer imagined artificial intelligences vying for independence and using people as tools. Vonda N. McIntyre's Starfarers trilogy depicted the interdependence of human minds and the computer network, and Bruce Sterling in Islands in the Net showed how a world dependent upon information is subject to piracy and terrorism. Neal Stephenson's Snow Crash described the chaos that might be created by a computer virus. But Greg Bear in The Forge of God and its sequel, Anvil of Stars, displayed a universe in which star civilizations may use machines to destroy other technological civilizations, a possibility that Charles Pellegrino and George Zebrowski argued in The Killing Star, because of the ease with which entire planets could be wiped clean with relativistic missiles, would be the logical outcome. Gregory Benford in his Great Sky River tetralogy laid out a scenario in which the universe becomes a battleground between machine intelligence and biological intelligence, and Vernor Vinge in A Fire Upon the Deep, one in which artificial intelligences roam the galaxy as Powers until they get bored with

human interactions and retire to the empty spaces between the galaxies.

Now for the new stuff, in addition to a few afterthoughts: GraceAnne DeCandido added to the article itself a reminder of Ursula K. Le Guin's Always Coming Home, in which the Archivist of the Madrone Lodge says, "Books no one reads go; books people read go after awhile. But they all go. Books are mortal. They die. A book is an act; it takes place in time, not just in space. It is not information but relation."

Gordon Cheatham wrote about the film Rollerball in which the main character goes to a library but is told that there are no longer any "books" to be had. At the Main Library in Geneva, he discovers that all human knowledge has been inscribed onto water molecules in a cube of water six feet on a side--but is inaccessible because there is too much of it. Cheatham also cited the moment in Heinlein's Have Spacesuit--Will Travel when the teenager who is the protagonist quotes his father: "Library science is the basis of all science, just as mathematics is the key. Whether our society survives or falls will depend on how well librarians do their job."

And from the Internet, via J. B. Post, came these additions: Post had recalled a series about an interstellar "library corps" that went around trading ideas from planet to planet. From the Internet came the identification, "An Ounce of Dissension" and "The Case of the Perjured Planet," published originally by Martin Loran in Analog in 1966 and 1967 and reprinted in an Australian anthology edited by John Baxter (Robert A. Woodward). I was able

to add the information that Martin Loran was a pseudonym for Baxter and Ron Smith.

Also from the Internet: Eluki Bes Shahar's Hellflower trilogy concerns a universe in which consorting with libraries is the ultimate crime, and suspected librarians are lynched (Elizabeth Hanes Perry). Another Internet helper (John Boston) remembered A. E. van Vogt's "Film Library" (1946) in which a character ordering educational films gets them from centuries in the future, and Murray Leinster's "A Logic Named Joe" (1946) that imagines futuristic TV sets that can be used to communicate and to ransack data libraries all over the world. And the note asks, "Does this remind you of anything?"

An Australian writer, Sean McMullen, sent me a copy of his novel Voices in the Light, as he described it, an "SF novel of librarian-based dictatorships, medieval cyberpunk, and duels to settle the finer points of library procedure." It also involves computers made up of specialized human components, and is part of the "Greatwinter" series that includes Mirrorsun Rising. McMullen adds his "wife is the librarian in our family, I'm only an engineer."

Finally another Internet respondent (Andrew Solovay) reminded me of something I should have remembered: David Brin's Uplift series composed of Sundiver, Startide Rising, The Uplift War, and the newly released Brightness Reef, which the beginning of a new trilogy. Aliens own Brin's Uplift universe. Every civilized group has been "uplifted" by a patron species and is indentured to them. Only humans have no patron, and have

apparently "uplifted" themselves and chimpanzees and dolphins as well. One of the tools of the Five Galaxies is the Galactic Library, which is the source of all wisdom and information. Brightness Reef, however, raises for the first time the issue of the dependence of uplifted species upon the answers available from the Galactic Library. Wolfling humans didn't have the benefit of the Galactic Library, and Brin raises the consequences of received wisdom.

He wrote: "It is said that humans on Earth spent untold generations living in brute fear, believing a myriad things that no sensible person would ever imagine. Certainly not anyone who had been given truth on a silver platter -- the way it was given to nearly every sapient race in the Five Galaxies.

"Earthlings had to figure it all out for themselves. Slowly, agonizingly, Humans figured out for themselves how the universe worked, abandoning most of the fanciful beliefs they carried through their long, dark loneliness....

"Even so, the newly contacted Galactics saw Earthlings as superstitious primitives, as wolflings, prone to weird enthusiasms and peculiar, unprovable convictions."

And a bit later Brin has a character talk about creativity as a product of the inadequacy of language--that is, the various Galactic languages are self-correcting, but human language is filled with ambiguities and prone to error. "Creativity...calls for a different kind of grammar. A completely different way of looking at error....

"By shattering preconceptions. By allowing illogical,

preposterous, even obviously wrong statements to parse in reasonable-sounding expressions.... By putting manifest contradictions on an equal footing with the most time-honored and widely held assumptions, we are tantalized, confused. Our thoughts stumble out of step....

"For every good idea, ten thousand idiotic ones must first be posed, sifted, tried out, and discarded. A mind that's afraid to toy with the ridiculous will never come up with the brilliantly original....some absurd concept that future generations will assume to have been 'obvious' all along...."

That, I suggest, is a good description of science fiction as well, and I recommend it to you.

SPECIAL LIBRARIES ASSOCIATION
MILITARY LIBRARIANS DIVISION

MILITARY LIBRARIANS WORKSHOP
EXECUTIVE BOARD MEETING

Monday, 9 October 1995

Plaza Inn Hotel

Kansas City Missouri

1800 Consulate Room

1. Call to Order and Approval of Agenda

BARBARA WRINKLE

a. Introductions

CHAIR:

BARBARA WRINKLE
HQ USAF Library Program

AIR FORCE:

GAIL HODGE
AF Materiel Command

ARMY:

ALEXANDRIA CAMPBELL
TRALINET Center

NAVY/MARINE CORPS

KATHY WRIGHT
Naval Command, Control and
Ocean Surveillance Center

DoD

ALICE CRANOR
Defense Intelligence Agency

CANADA:

SAMUEL ALEXANDER
Royal Military College
of Canada

CHAIR, SLA/MLD:

MARY-DEIRDRE CORAGGIO
Naval Air Warfare Center

IMMEDIATE PAST CHAIR, SLA/MLD

SYBIL BULLOCK
Redstone Scientific
Information Center

CHAIR-ELECT, SLA/MLD:

GRETCHEN SCHLAG
DTIC

SEC/TREASURER, SLA/MLD, AND MLW:

MARGARET H. (JEAN) BANNISTER
Redstone Scientific Information
Center

PARLIAMENTARIAN MLW:

NORMAND L. VARIEUR
US Army ARDEC (retired)

ARCHIVIST MLW: :

MARTHA DAVIS
Combined Arms Research Library

DR. RICHARD WERKING
US Naval Academy Nimitz Library

CAROLYN RAY
AF Wright Laboratory

Jean Bannister

Jean Bannister

Tina Byers

a. Announcements, changes, etc.

b. Evaluation form

c. Budget (to date)

Barbara Wrinkle

4. Status Report on MLD/MLW;
A History by William Palmer

Barbara Wrinkle

5. Revision to Procedures Manual

Barbara Wrinkle

a. Appendix A - Allocation of Spaces/Invitations

b. Appendix F - Military Librarians Workshops

c. Appendix G - MLW Executive Board

6. Site/Location Selection, Legal Ramifications

Barbara Wrinkle

7. MLW-40 Announcements

Dr. Werking

1996 - US Naval Academy Nimitz Library
Annapolis MD 21402-5029

Carolyn Ray

a. MLW-41, 1997 Air Force
Wright Laboratory Technical Library
Wright Patterson AFB OH 45433-74111

b. MLW-42, 1998 DoD?

c. MLW-43, 1999 Army?

d. MLW-50, 2006 Air Force
Air University Library
Maxwell AFB AL

9. Executive Board Members

- a. Expiration: Navy Representative (1995)
- b. Appointments: Auditor, Archivist

10. Executive Board Videoconference

- a. Date
- b. Participants

11. New Business

12. Adjournment

ARMED SERVICES REPORTS

Air Force - Annette Gohlke

Kansas City, Missouri 10-12 Oct 95

FY95 was the "R" year for Air Force Libraries. Words like reengineering, reorganizing, risk, retirements, reductions, resources, renovation and readiness served as our watchwords. This was the year to close bases including Plattsburg, Griffiss, KI Sawyer and RAF Chicksands. We have only one more base from the last big BRAC to close next year. Our system is now only 118 full service libraries: 19 technical, 10 academic, 88 general, and 1 library service center. We've reduced by 28.7 percent in the last five years by closing 47 libraries.

The July BRAC identified Kelly, McClellan, and Reese Air Force bases for closure which will impact 3 base and 1 technical library. The remaining 188 libraries are supporting 5 branch libraries, 12 site, 63 field, and over 300 remote locations. Our customers still get quality library service.

Readiness remains a major Air Force initiative with library service identified as an important part of the readiness function. The USAFE Library Service center supported 15 contingency operations this past year. They provided books, magazines, newspapers, video and audio cassettes to troops in Europe, the Mideast, and Africa. Air Combat Command spearheaded library support to Guantanamo Bay, Cuba and were assisted by the USAFE library service center and our office. We find that team work continues to pay big dividends to Air Force personnel.

The technical libraries play a strong role in mission support which also contributes to readiness. The technical libraries had a fairly stable year and held their own in obtaining resources--both funding and manpower. Outsourcing is still a threat. Rome Laboratory survived a proposed relocation and consolidation and should remain stable in New York for the next five years. Brooks Aeromedical Library will remain in Texas instead of moving to Wright Patterson. Kelly Engineering Library will close. Phillips Laboratory continues to be very active in resource sharing as part of the New Mexico alliance with 3

Armed Services Reports

universities and Sandia and Los Alamos. Phase I of the Phillips Lab Optical Indexing Project was completed this year with 93,000 pages imaged. With two phases to go they are already looking for outside customers for unclassified materials.

Wright Laboratory is almost fully staffed after a risk-taking move by super manager Carolyn Ray. After reorganizing in December and combining STINFO with the library, Carolyn was forced to cut customer hours significantly due to position vacancies. She got management's attention, was allowed to fill the staff positions, and then she restored customer hours and service. Wright Lab is the first Air Force library to purchase Ameritech Horizon's new client server integrated library system architecture. It provides a Windows based environment. They are also aggressively marketing Golden Gate, DTIC's gateway, as a solution to end-user access to databases.

Three of our valuable colleagues retired this year. Eva Haas, command librarian in USAFE retired in December after 38 years of federal service with Air Force libraries. Frances Lum closed down RAF Chicksands and retired with 42 years. Both ladies are in the San Francisco area checking out libraries. Mary Lou Sauer, Air Mobility Command librarian, retired in April with 30 years and moved home to Minnesota.

We welcomed Marlow Peters as the new US Air Forces Europe command librarian and Audrey Marques at the new Air Mobility Command librarian. We are also proud to introduce Doctor Edward Scott the first civilian director of the Air Force Academy Library. Mr. Jim Perkins is the new director of the Air Weather Service Library.

General libraries have been hit with personnel reductions since they lost all nonappropriated (NAF) positions and funds as of 1 Oct 94. Some libraries are operating with as few as 2 to 4 people since there aren't enough appropriated funded (APF) positions to be found.

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The good news is we have some real library supporters in top leadership. General Fogelman, Chief of Staff, helped keep Hill AFB from being closed due to APF position cuts. General Habinger, Chief of Personnel, is in charge of Quality of Life funds, and is a strong library supporter. Many other generals and colonels are strategically placed where they have demonstrated they can and will help libraries. This clout will be needed in the future as three base libraries have been identified for outsourcing--Maxwell, Randolph, and Eglin Air Force Bases. This is the first threat since the mid-1980s in general libraries.

This was an excellent year for library renovation including expansions and new libraries. Luke, RAF Lakenheath, McGuire, Scott, Charleston, Eielson, and Spangdahlem have lovely new facilities. Over 40 more general libraries are planning for major overhauls in the next 5 years as a result of an Air Force-wide needs assessment study of all MWR activities.

In the resource arena we are pleased to announce the Air Force libraries continue to fare well in APFs. Technical and academic libraries have the strongest growth in budgets, but general libraries are doing well overall. Central APFs provided by Air Force headquarters to support mission and education information requirements remain stable. We spent \$4.2 million on office support and \$7.5 million on libraries in FY 95.

We reengineered our central procurement program this year by centralizing the purchasing functions in our office. Now 117 libraries send in orders which are purchased using FEDLINK vendors, the government credit card program, or the contracting office at Wright Patterson Air Force Base who awards sole source contracts over \$2500. We centrally fund book, subscription, document delivery, Interlibrary loan, on-line services, and OCLC Services including First Search. The new IMPAC (credit card) purchase program revolutionized information delivery and customer service this year by reducing delivery time on an average of 12 weeks. CONUS libraries can get 2-5 day delivery and overseas libraries can get materials in as little as two weeks. This revolutionized customer service. Barbara Wrinkle tells me we operate the largest IMPAC program in the Air Force. Our commander gave us three new library

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technician positions to help with the increased workload. A 60 percent increase in staffing to take a 900 percent increase in workload is right in line with current federal initiatives, don't you think?

Our consolidated order program increased by 30% since we purchased over 300 titles or products and saved over \$1.6 million. Our major quality of life initiatives included the funding of Future Tests, with computers, for all general libraries, renewing PROQUEST and funding LANs for 27 libraries. We'll fund and install LANs for all remaining libraries that don't have them in FY96. We distributed about \$2 million to librarians so they could select and purchase additional materials for their libraries.

Training was a big initiative this year. We taught three Library Activity Managers courses at the Air Force Services Agency. All directors of general libraries must take the 3-week course. We also conducted six regional workshops which included procedures for central procurement and hands-on computer training on three Library Management Information System software programs we developed for the field to use to manage funds, office collections and acquisitions. We also funded on-site OCLC training for 15 libraries.

The MAJCOMs are involved in getting Integrated Library Systems funded and installed in their libraries. This year Air Education and Training Command awarded a contract to Dynix, now Ameritech Horizons, for their 13 base libraries and funded six of them. Air Force Material Command awarded their contract to Stylis and funded 4 of their 10 general libraries. Air Combat Command has been busy installing GEAC systems, and USAFE is installing Dynix (Horizon) systems. We've been told that FY97 may be designated as the "Year of Library Automation" by General Mormon, Deputy Chief of Staff. If so, we should definitely meet our automation goals of having 98 percent of all libraries (1) up and running on integrated library systems, (2) with CD-ROM LANs, (3) end-user access to on-line information services, and (4) offering remote 365-day access to all on-line services from home or office for the Air Force community.

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The Library Steering Committee began reengineering AFLIS last year. We redefined the mission and created a new vision and then identified the critical success factors to implement the vision. The new vision--"Information professionals exploiting state-of-the-art technology to provide quick access to information in any format when and where customers want it." General libraries must focus less on recreation and more on the mission by strengthening their capabilities to provide job-related (mission) information to decision-makers. To encourage this, we're offering \$1000 to every library who demonstrates PROQUEST and FIRST SEARCH services to commanders, senior enlisted, and civilian personnel for job related research. The Steering Committee is developing a plan which will put us on track to change our paradigm.

As part of the reengineering effort, we are preparing for a functional process improvement (FPI) review next year. We have identified the key functional processes in general libraries and libraries are listing the steps in each process assigned to them. We will use the information to establish "core" service standards for small, medium, and large libraries. The Air Force Management Effectiveness Agency will conduct the FPI with help from our Agency and library staff. The FPI will determine how many and what kind of positions are needed to operate a modern library.

As you can see, this has been a very big and busy "R" year for Air Force libraries. There have been far more positive than negative events. We continue to make phenomenal progress because of the dedication, hard work, and high performance library teams which make up the Air Force Library and Information System.

I want to thank each and every Air Force librarian for their friendship, help, guidance and cooperation, especially during the last 11 1/2 years I've been at the headquarters. It's been a privilege and pleasure working with you to achieve the level of excellence we've obtained. I'm proud of our accomplishments and I look forward to hearing all of the good news in the years to come as you continue to meet the challenges, overcome the obstacles and continue to give the very best customer service to our Air Force men, women,

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and families. It has been my greatest professional privilege to serve as the director of AFLIS. I now look forward to a new way of life as I retire on 3 January. I plan to stay professionally active, and look forward to seeing many of you at future MLWs.

1995 ANNUAL MILITARY LIBRARIANS WORKSHOP ARMY REPORT

Army Library Committee (ALC). The ALC was officially disbanded by our proponent organization, Office of the Director of Information Systems for Command, Control, Communication, and Computers (ODISC4). In an effort to maintain our peer to peer communications network, the Army Library Steering Group was formed. Jewel Player, Command Librarian for U.S. Army Materiel Command is the current Chairperson.

Placement of Army Libraries. Once again Army libraries are in a state of transition. The ODISC4 has decided to divest itself of the policy and advocacy responsibilities related to libraries. They are seeking an Army Staff element willing to take this responsibility.

Army Libraries with Home Pages.

- a. Combined Arms Research Library (CARL)
<http://www-cgsc.army.mil/cgsc/carl/carl.html>
- b. National Defense University
<http://198.80.36.91/ndu/library>
- c. Redstone Scientific and Information Center
<http://hwillwww.rdec.redstone.army.mil/MICOM/RSICHomepage.html>
- d. U.S. Military Academy, West Point
<http://www.usma.edu/>

Community Family Support Center, Barbara Christine, Acting Library Program Director. Barbara has completed a draft of Standards for General Libraries and a Strategic Plan for the 21st Century. Barbara received \$450K in year end funds to purchase library resources for general libraries and additional funds to purchase 50 PC work stations with CD-ROM drives and disk changers. Barbara also reports that over 100 general libraries have closed from various BRAC initiatives.

1995 Annual Military Librarians Workshop--ARMY REPORT

TRADOC: Janet Scheitle, Command Librarian. Janet has written a "Vision Statement for TRADOC Libraries." The statement has received implementation approval from the TRADOC Chief of staff with a promise of funding via the Key Enabling Investment initiatives.

U.S. Army Pacific: Richard Hanusey, Command Librarian. Army is installing the SIRSI Unicorn system via the Air Force's contract. The two services will create a joint corporate database.

HQ EUSA, Korea: Mike Morrison Command Librarian. Two new librarians were hired this year, one from the Smithsonian Institute and the other from Kirk Biological Services, North Dakota. OPM Hawaii, will maintain a register of applicants for future positions in the Pacific. The main library in Seoul received major renovations.

U.S. Army South, Panama: Joyce Ullrich Command Librarian. In preparation for the Panamanian Government take over, two libraries on the Atlantic side have closed.

FORSCOM: Charles Ralston Command Librarian. Four general libraries have moved from the Morale Welfare Recreation side to a partnership with the Education Centers.

U.S. Army Military Academy, West Point: Kenneth Hedman, Library Director. The library has successfully migrated from GEAC to the Innovative Interfaces Library System. Access to the system is available via the Internet.

Submitted by:
JEWEL A. PLAYER
Chair, Army Library Steering Group

CANADIAN DEPARTMENT OF NATIONAL DEFENCE REPORT

As reported in last year's presentation, the Royal Military College of Canada in Kingston is the only military university. The College has officially acquired a bilingual name: Royal Military College of Canada--College militaire royal du Canada (RMC/CMR). As of 28 May 1995, the other two universities, College militaire royal de St-Jean and Royal Roads Military College (RRMC), no longer exist in that form. The latter has taken over by the province of British Columbia, and final resolution of College militaire royal de St-Jean is still to be finalized. Some holdings from RRMC have been received and are being integrated into the RMC/CMR collection.

Concerning the budget of February 1995, some other defense establishments have been slated for closure. Also, as a result of cutbacks, the Directorate of Scientific Information Services (DSIS) has been drastically reduced. It was hoped that DSIS would be integrated with the Canada Institute for Scientific and Technical Information (CISTI) and that much of its present form would be maintained. However, these negotiations did not materialize. Since DSIS is going through this readjustment, there have been no representatives at this Military Librarians Workshop. I am sure that their U.S. colleagues will miss them.

The student (Officer-Cadet) population at RMC/CMR is now 1,200. This has led to major readjustments on the College campus, and the library system has taken its share of the impact. One of the consequences of the closure of College militaire royal de St-Jean is the emphasis on acquiring French-language material. In its capacity as the only bilingual military university, RMC/CMR is very sensitive to any complaints about its not being able to provide equal educational opportunities in both official languages of Canada. Extra funds have been promised over the next three to five years to augment the French-language holdings in the library. All professional librarians and some of the other staff members are officially bilingual and offer services in either language.

To encourage early retirement, some schemes have been put into action. We are not sure how many employees will be affected. We know that RMC/CMR libraries have lost one position last year. New appointments are still

Canadian Department of National Defence Report

in abeyance except to accommodate other affected employees of DND or the Public Service of Canada. Some other rules concerning "term" employees have been revised, and the changes are in effect until 1997.

Last year we had hoped that this year would be more positive. However, one bad year seems to have followed the other. We are hopeful that the next year will be better, although we shall miss many of our colleagues.

[Sam Alexander, Chief Librarian, Royal Military College of Canada--
College militaire royal du Canada, Kingston, Ontario is the Canadian coordinator for MLW. He was unable to attend this year's workshop. In his place, Jennifer Mullan, Head of Cataloguing, Massey Library, RMC/CMR, Kingston, Ontario submitted his report.]

NAVY REPORT MLW 1995

As Librarian of the Navy, I am a coordinator and advisor to the special, medical and academic libraries of the Navy and Marine Corps. Currently, there are about 120 such libraries and information centers, and they're located in almost as many commands. I'm a one person operation with no budget for program or centralized support. In other words, Navy is a thoroughly distributed library and information center environment. It's an environment which in these days of relentless downsizing is urgently in need of more networked and resource sharing solutions and mechanisms to assist library managers in addressing major challenges. You all well know that many of these challenges relate to balancing diminishing library resources to maintain traditional functions and services against rising and changing patron demand in an increasingly more complex electronic information world.

This is by way of introduction to my report this year. Instead of recounting the usual categories of news items as in past years, I'd like to focus on Navy efforts to explore partnering and collaborative strategies. (Also, in all honesty, my 1995 focus on this area was at the expense of other work, such as writing newsletters, conducting forums for continuing education, and command visits).

First:

o FY96 DOD Legacy funds were obtained for a Navy-wide library project. Brenda Corbin, librarian at the Naval Observatory, pioneered the Legacy funding source in Navy, and is now in a third year of a Legacy funded project to catalog rare materials at the Observatory. Inspired by her success, Bob Schnare, Director of the Naval War College Library, wrote a Legacy proposal on behalf of all Navy libraries in the area of disaster preparedness. The proposal has been funded for a contract which Bob and I will monitor to revise the **Rhode Island Disaster Manual** for Navy libraries, to create a REACT*PAK or kit of materials to use in the event of library disasters, and to create a training video on how to handle wet books. Also, videos on disaster preparedness planning will be purchased and made available for Navy inter-library loan. The **Manual**, react kits, and video will be distributed to all Navy libraries and information centers

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that supply the Librarian of the Navy with a comprehensive disaster preparedness plan. Those who don't will be identified as objects of a relentless crusade to address this important area.

o The Joint Union List of Periodicals (JULIP) is now a reality. It is a CD-ROM of the periodical holdings of the 43 army TRADOC libraries and 13 Navy and Marine Corps special, medical, and academic libraries. It has been a joint project with TRALINET supplying the database software, Office of Naval Intelligence providing the CD recording, mastering and replication, and me providing database editing. In 1996 we look forward to TRALINET's streamlining the database structure and adding an ILL function, and also expanding this pilot project to include more Navy and Marine Corps libraries.

o The third collaborative effort I'd like to tell you about is the NDVL Project. That acronym stands for the Navy Laboratory/Warfare Center Coordinating Group Distributed Virtual Library. The libraries included in this project are those of the former Navy labs that were realigned in BRAC-92 into 4 warfare centers, their various subsidiary sites, and the Naval Research Laboratory. The NDVL Project is an initiative to modernize networking of scientific and technical information across the Navy lab environment to the desktops of its 22.5K scientists and engineers.

The underlying strategy of this initiative is to partner with a major sector of library users (the scientists and engineers) including network and systems engineers to better utilize library resources and work together to tackle major and expensive challenges in licensing, access, and delivery. Specifically, the goals of the project are to identify core scientific and technical information sources needed across this community, identify optimum access and delivery means for end users and libraries, coordinate acquisition and licensing of identified sources, and coordinate networked deployment.

The NDVL is a three-phased project. Phase I is a User Needs Assessment and Analysis which will be completed in December and is focused on

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determining the core content required by users.. Phase 2 (FY96) is development of a coordinated acquisition plan of the identified content, a network technical plan, and pilot project design. Phase 3 (FY96-97) is implementation.

The NDVL Library directors met in late September in Washington for three days to brainstorm coordinated acquisition and deployment of the most highly ranked user requirements identified thus far. They decided to establish a NDVL home page, and identified initial targets for delivery via the page: a table of contents browse service, a Web-based union catalog of Navy lab libraries, scripted access to selected university OPACs, the Community of Science, and the finding guides to the Navy Lab Technical History Archives.

We think the NDVL Project has great potential for scaling up in the very near future to include other Navy commands outside the lab community. Licensing of electronic products and network deployment regardless of content/subject matter are major issues for all military libraries. Also, we're anxious to interface the objectives of this project with Navy information producers to coordinate with electronic publishing and dissemination. And, we're most anxious to partner and work with other Navy and DOD organizations to address electronic journal technical and management issues. (I'd like to mention that one of the really cool projects in electronic journals is happening at the Naval Research Library which launched its new Torpedo service: networked delivery of two American Physical Society periodicals full text, and in the new fiscal year will be working on providing full text electronic access to 60 Elsevier published journals for NRL employees).

The collaborative efforts I have mentioned to you today are information technology based. I think that the excitement and enthusiasm we see in library users and command managers for the Internet and the Web can provide DOD libraries with great opportunity to join, interface, and where appropriate, much more effectively integrate library management strategies and vision with our user

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communities. Internet and the Web only increase the focus on librarians as the content, selection, and navigation experts. But, it's difficult and sometimes simply physically impossible to be all things: virtual library pioneers and at the same time managers of traditional library facilities, collections, functions, programs, and services. In Navy (and I'm convinced this is true throughout DOD), library managers are very isolated in the sense that the library director is usually the only library and information science professional at the command staff meetings and lacks the organizational alliances to compete for resources.

I'm also convinced that real, tangible partnering, inter-service, joint, and/or collaborative strategies should become the priority for Navy and DOD library managers. I urge you to think about Navy's efforts that I've mentioned, and invite you to brainstorm and work with us. There are Navy librarians with experience in strategizing multi-type library networking (e.g., Marilyn Schwartz and Bryan Thompson), and I imagine there are others in the Army and Air Force.

I'd like to enumerate what I think are just some of the pressing library and information issues and needs that could be beneficially addressed on a joint basis:

- o uniform licensing for DOD
- o Internet use policies and guidelines
- o cooperative cataloging schemes
- o cooperative library acquisitions and collection development strategies
- o network security and access control policies
- o fee for services and charge back
- o application of the revised classification standards
- o systems support and training for both library staffs and end-users
- o standards of adequate space and facilities
- o guidelines for adequate book and periodical funding
- o identifying unique collections and strategizing for their preservation.

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Finally, from my Navy perspective, which is the distributed environment in its purest form, we DOD library managers must get proactive. In addition to the fine continuing education and networking venue of MLW, let's form a joint library working group to crystalize best library management and service policies and practices and ensure that they transfer and integrate with the DOD virtual library environment. Let's write white papers; let's be identifiable highly visible leaders, experts, and spokesmen to our service and top DOD management levels; and let's speak as a powerful cohesive voice on the many key information issues which directly impact the capabilities of the DOD work force.

Joan L. Buntzen
10-12-95

39th MILITARY LIBRARIANS WORKSHOP
ATTENDEES LIST
October 10-12, 1995

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619 553-8425
aldous@vax309.nhrc.navy.mil

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REED REFERENCE PUBLISHING
6606 WIDGEON DR
MIDLAND, GA 31820-9750
706 561-7530; 800-562-7530

ARDEN, MICHAEL G.
35 SVS/SVRL (PACAF USAF)
PSC 76 BOX 6719
APO AP 96319-6719
011-81-3117-66-3068
brigg@emh.misawa.af.mil

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1222 SPRUCE ST, RM 1.204
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314 539-6111
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205 876-9309
RSIC@REDSTONE.ARMY.MIL

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WASHINGTON DC 20375-5335

BRAUTIGAM, MARGARET
DEFENSE TECHNICAL INFORMATION CENTER
8725 JOHN KINGMAN RD SUITE 0940
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703 767-9149
mbrautig@dtic.dla.mil

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AIR EDUCATION & TRAINING COMMAND
1851 1ST ST EAST SUITE 2
RANDOLPH AFB, TX 78150-4316
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DSN 487-3791
buchanan@aetc.afsv.af.mil

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AIR UNIVERSITY LIBRARY/LSE
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334 953-2190

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FORT MONROE, VA 23657-5000
804 727-4291
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618 256-5100/3028
DSN 576-5100/3028

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100 COMMUNITY LOOP
VANDENBERG AFB, CA 93437-6111
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SPACEPRT@RAIN.ORG

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LACKLAND AFB, TX 78236-5200
210 671-2767
cashp@dli3.lak.aetc.af.mil

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PHILLIPS LAB RESEARCH LIBRARY
HANSCom AFB
BEDFORD, MA 01731
617 377-4738

CHAMBERS, FRANCES (CISSY)
ARMAMENT DIRECTORATE, TECH LIBRARY
203 W EGLIN BLVD SUITE 300
EGLIN AFB, FL 32542-6843

CHINN, BERNICE
OFFICE OF NAVAL INTELLIGENCE
4251 SUITLAND RD
WASHINGTON DC 20395
301 669-4388

CHRISTENSEN, STEVEN B.
COMPUTER DATA SYSTEMS INC.
DUGWAY, UT 84022
801 831-3565
schristn@dugway.emh4.army.mil

CHRISTINE, BARBARA
USACFSC (CFSC-CR-L) ARMY GENERAL PROGRAM
2461 EISENHOWER AVE
ALEXANDRIA, VA 22331-0510
DSN 221-2522

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334 953-2347; DSN 453-2347
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913 684-4313

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ATTN DOI-3 BLDG 6000
BOLLING AFB
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202 373-4005; DSN 243-4005
afcraat@dia.osis.gov

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ENGINEER SCHOOL LIBRARY
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crawforc@wood-vines.army.mil

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805 734-8232, X69748
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WOODWORTH LIBRARY
BLDG 33550
FORT GORDON, GA 30905
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danesf@emh1.gordon.army.mil

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23 SVS/SVRL BASE LIBRARY
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910 394-2791; DSN 486-2791

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803 566-5672

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16 SVS/SVRL
410 CODY AVE
HURLBURT FIELD, FL 32544
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pam.doffek@hurlburt.af.mil

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3550 ABERDEEN, S.E.
KIRTLAND AFB, NM 87116
DSN 846-4767
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011-49-631-536-7173
filkil@wpc.af.mil

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502 798-7466

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DSN 856-5305
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ARLINGTON, VA 22245-5200
703 602-8771
francep@stmp-gov.spawar.navy.mil

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US ARMY ATCOM
4300 GOODFELLOW BLVD
ST LOUIS, MO 63120
314 263-2954

FRYAR, LINDA
82 SVS/SVRL
425 3RD AVE
SHEPPARD AFB, TX 76311-3043
817 676-2687
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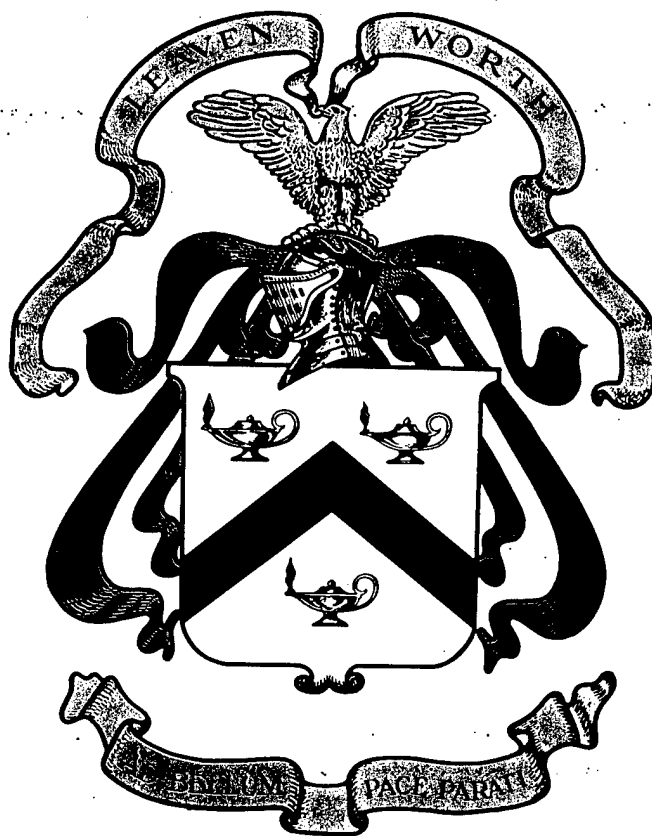
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39th Military Librarians Workshop

"Information Warfare: Librarians on the Frontline"



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Combined Arms Research Library
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Welcome

The Combined Arms Research Library and Fort Leavenworth welcome you to the 39th Military Librarians Workshop. The focus of this year's workshop is "Information Warfare: Librarians on the Frontline." Representatives from government, universities and the private sector will present a fully rounded program to consider the issues. Combined with the opportunity to freely exchange ideas with our colleagues, the Workshop will be a unique opportunity to think about and discuss issues which will be at the heart of our future.

Librarians are now and always have been concerned and passionate about finding and accessing information. Like the old saw about having to know what business you're in -- we're in the information business, not the book or microfiche or CD-ROM business. The medium is not nearly as important as the message.

The Military Library Division continues to pinpoint those issues which are critical to the changes in our professional world, and which will enable us to do a better job for the DOD community. This Workshop is a key opportunity for professional training and a chance to share our vision of libraries.

Welcome to Kansas City, Missouri, and Fort Leavenworth, Kansas. We hope you have a productive workshop and a lot of fun.



MARTHA A. DAVIS

Director

Combined Arms Research Library

39th Annual Military Librarians Workshop

"Information Warfare: Librarians on the Frontline"

PROGRAM

October 9 - 12, 1995
Fort Leavenworth, Kansas

MONDAY, 9 OCTOBER

2:00 p.m. - 7:00 p.m.	Registration	Convention Foyer
8:00 a.m. - 5:00 p.m.	Air Force Steering Committee Meeting	Board Room A
6:00 p.m. - 7:00 p.m.	Service Meetings	
	Air Force Canadian DIA/DOD	Board Room A Board Room B Board Room C
6:00 p.m. - 8:00 p.m.	MLW Board Meeting	Board Room D
7:00 p.m. - 9:00 p.m.	No Host Mixer	Regency West

We would like to thank the following
companies for their generous donations
to defray the cost of refreshments.

Ebsco

Bookmark

Ameritech

Blackwell North America

Congressional Information Service

TUESDAY, 10 OCTOBER

7:00 a.m. - 8:00 a.m.	Breakfast	Regency East
7:00 a.m. - 1:00 p.m.	Registration	Convention Foyer
8:00 a.m. - 8:30 a.m.		Regency West

Welcome Addresses

Martha Davis, Director, Combined Arms Research Library
Brigadier General David H. Ohle, Deputy Commandant, Command and
General Staff College, Fort Leavenworth, Kansas
Representative, Kansas City, Missouri Mayor's Office

8:30 a.m. - 10:00 a.m.	Regency West
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Keynote Address

"Information Warfare, Netsurfing and Military Secrets"
Winn Schwartau

10:00 a.m. - 10:15 a.m.	Break
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10:15 a.m. - 11:30 a.m.	Regency West
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Keynote Address

"Librarians in the Information Age: Warriors or Wall Flowers?"
Robert Steele

11:30 a.m. - 1:00 p.m.	Lunch (Dutch Treat)
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1:00 p.m. - 2:45 p.m.	Regency West
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Discussion Panel/Q & A
with Keynote Speakers

"Do we need a National Information Policy? Is 'Internet Security'
an Oxymoron? And other topics..."

(Tuesday, continued)

2:45 p.m. - 3:00 p.m. Break

3:00 p.m. - 3:50 p.m. Regency West

"From the Department of War to the White House: A Library
Legacy"

Mary Ann Nowell , White House Librarian

3:50 p.m. - 4:00 p.m. Break

4:00 p.m. - 4:30 p.m. Regency West

"DTIC Update"

Cheryl Hunter, DTIC

4:30 p.m. - 5:00 p.m. Regency West

"FEDLINK Update"

Susan Tarr, FEDLINK

7:00 p.m. - 12:00 a.m. **SPECIAL EVENT - Optional**

Kansas City Jazz Club Tour
and Barbecue Dinner
(Bus service provided from Plaza Lower Lobby)
or
Dinner on your own

WEDNESDAY, 11 OCTOBER

6:30 a.m. - 7:30 a.m.	Breakfast	Regency West
7:40 a.m.	Board Buses to Fort Leavenworth (Bus Service provided from Plaza Lower Lobby)	
8:40 a.m. - 9:00 a.m.	Arrive Fort Leavenworth	
9:00 a.m. - 11:30 a.m.	Tours of the Post, Museum, and the Library. Demonstration of the Tactical Commanders' Development Program (TCDP), and a lecture and demonstration by Dr. Rick Morris on the Army Knowledge Network (AKN).	
9:00 a.m. - 11:00 a.m.	Army Library Steering Committee Meeting	Conference Room 113
11:30 a.m.	Board Buses for Lunch - Community Center (Bus Service provided from Eisenhower Hall)	
12:00 p.m. - 1:30 p.m.	Luncheon Speaker John Reichley, Instructional Systems Specialist, Command and General Staff College	
1:30 p.m.	Return to Fort Leavenworth (Bus Service provided from Community Center)	
2:00 p.m. - 4:00 p.m.	Tours of the Post, Museum, and the Library. Demonstration of the Tactical Commanders' Development Program (TCDP), and a lecture and demonstration by Dr. Rick Morris on the Army Knowledge Network (AKN).	
2:00 p.m. - 4:00 p.m.	MECC Library Working Group	Conference Room 113
4:15 -	Board Buses to Plaza Inn (Bus Service provided from Eisenhower Hall)	
5:00 -	Dinner (Dutch Treat)	
6:00 p.m. -	Navy Meeting/Dinner	Brookside

THURSDAY, 12 OCTOBER

8:00 a.m. - 9:00 a.m.	Breakfast Announcements/Service Updates	Regency East
9:00 a.m. - 9:15 a.m.	Break	
9:15 a.m. - 10:30 a.m.		Regency West
	"Copyrights in Electronic Media"	
	Charlotte Douglass, Library of Congress	
10:30 a.m. - 10:45 a.m.		Regency West
	"Librarians in Science Fiction"	
	Dr. James Gunn, University of Kansas	
11:45 a.m. - 12:00 p.m.	Conference Wrap-up	Regency West
12:00 p.m. - 1:00 p.m.		Board Room D
	MLD Executive Board Meeting	
12:00 p.m. - 1:00 p.m.	Lunch (Dutch Treat)	
1:30 p.m. - 5:00 p.m.	SPECIAL EVENT - Optional	
	Truman Library Tour "Behind the Scenes"	
	(Bus Service provided from Plaza Lower Lobby)	

Something about ...

Tactical Commanders Development Program (TCDC) provides instruction for battalion and brigade level command selectees focusing on synchronization of combat power of the battalion task force and the brigade fight. TCDC employs Janus, an interactive, computerized ground combat simulation that offers the opportunity to replay historical battles and to demonstrate visually the tactical formations and methods of armies from history. Battles from almost any historical period since the introduction of firearms can be portrayed to show the impact of evolving tactical methods, weapons ranges, and organizations. Scenarios can be developed for either accurate recreation of specific battles, or for "what if" use to explore the potential impact of different command decisions or other factors.

Janus is one of the U.S. Army's newest and most flexible tactical training tools. Its ability to clearly and realistically portray tactical combat offers many opportunities for commanders and staffs to improve their skills in increasingly complex modern combat.

Army Knowledge Network (AKN) is an Armywide series of databases that share knowledge within the Army and with the Joint community. It includes records of operational units and training and educational institutions, including after action reports, operations plans, operations orders, lessons learned, etc.

The **Automated Historical Archives System** (AHAS) is a database within AKN that provides access to the Army's corporate memory through online database search and retrieval. It develops, maintains, and distributes the Army's electronic, multimedia archives for actual operations, simulated operations, peacetime preparation, war planning and other operations.

The Excalibur's **Electronic Filing System** (EFS) is the search and retrieval software used to access the AHAS. It searches words and phrases in the text of documents by using fuzzy logic or boolean searching. It retrieves text or images of documents and allows printing or downloading.

SPEAKERS



Winn Schwartau

Winn Schwartau is one of the country's leading experts on information security and electronic privacy.

As the Executive director of **Interpact, Inc.**, Winn provides services to industry and government on encryption, enterprise information security, information warfare, electronic privacy and related issues.

He is the author of **Terminal Compromise**, a novel detailing a fictionalized account of a computer war waged on the United States, which was the world's first **Novel-on-the-Net Shareware** and has become an underground classic.

Mr. Schwartau's nonfiction book **Information Warfare: Chaos on the Electronic Superhighway** (Thunder Mouth Press, NY 1994) is a compelling, nontechnical analysis of personal privacy, economic and industrial espionage and national security. He calls for the creation of a National Information Policy, a Constitution in Cyberspace and an Electronic Bill of Rights.

Winn's articles and often controversial editorial pieces appear in such magazines as: Information Week, ComputerWorld, Network Security, Internet World Virus Bulletin, Infoworld, etc. He also wrote a script for TV's **Law and Order** called "**The Hacker.**"

As an acknowledged expert in the field of information security, Mr. Schwartau has testified before Congress and works as an expert witness in court cases. He has appeared on many TV, radio news and talk shows and been featured in BBC and Discovery Channel documentaries.

Winn is a popular and entertaining speaker and interactive seminar leader who always keeps audiences of all sizes awake with thought provoking insights and commentary.

Robert David Steele

Robert Steele is the Chairman and CEO of **Open Source Solutions** Group and serves as President of its two subsidiaries. The nonprofit **Open Source Solutions, Inc.** sponsors an annual symposium on "Global Security & Global Competitiveness: Open Source Solutions". The for-profit **Open Sources, Systems & Services, Ltd.** publishes the monthly OSS Notices, manages [oss.net], a digital archive on open sources, systems and services, and provides open source intelligence through the Virtual Intelligence Center TM, and markets turnkey Intelligence Centers to business and government.

Mr. Steele was named one of the top 100 people in the information industry for 1992 and 1994 by *Microtimes*, in recognition of his campaign to bring together the intelligence community, the traditional (corporate) and nontraditional (brokers, hackers) information communities. He has written numerous articles on national intelligence restructuring and exploitation of open sources of intelligence, edited a book of readings on intelligence, produced a 16-hour educational video series, been interviewed by *CNN*, the *Washington Post*, *ComputerWorld*, *WIRED* and numerous European and Pacific Rim publications, and been featured in Alvin and Heidi Toffler's *War & Anti-War* and Winn Schwartau's *Information Warfare: Chaos on the Electronic Superhighway*.

A Marine Corps Reserve Officer, Mr. Steele serves as Adjunct Faculty for Intelligence at the Marine Corps University responsible for supporting intelligence education for all of the Marine Corps university schools, and teaches the resident Command & Staff College elective course on Intelligence and the Commander. He has served over eighteen years in the national security area including working with the CIA and establishing the Marine Corps Intelligence Center.

James Gunn

Born in Kansas City, Mo., in 1923, James Gunn received his B.S. degree in journalism in 1947 after three years in the U.S. Navy during World War II, and his M.A. in English in 1951, both from the University of Kansas, after graduate work in theater at K.U. and Northwestern. He has worked as an editor of paperback reprints, as managing editor of K.U. alumni publications, as director of K.U. public relations, and now is emeritus professor of English, and director of the Center for the Study of Science Fiction. He won national awards for his work as an editor and as a director of public relations. He was awarded the Byron Cladwell Smith prize in recognition of literary achievement and the Edward Grier Award for excellence in teaching, was president of the Science Fiction Writers of America for 1971-1972 and president of the Science Fiction Research Association from 1980-82, was guest of honor at many regional SF conventions, including SFeracon in Zagreb, Yugoslavia, and Polcon, the Polish National SF convention, in Katowice; was presented the Pilgrim Award of SFRA in 1976, a special award from the 1976 World SF Convention for Alternate Worlds, a Science Fiction Achievement Award (Hugo) by the 1983 World SF convention for Isaac Asimov: the Foundation of Science Fiction, and the Eaton Award in 1992 for lifetime achievement; was a K.U. Mellon Fellow in 1981 and 1984; and served from 1978-80 and 1985- as chairman of the Campbell Award jury to select the best science-fiction novel of the year. He has lectured in Denmark, Iceland, Japan, Poland, Romania, Sweden, Singapore, Taiwan, Yugoslavia, and the Soviet Union for the U.S. Information Agency.

Dr. Gunn has written plays, screenplays, radio scripts, articles, verse, and criticism, but most of his publications have been science fiction. He started writing SF in 1948, was a full-time freelance writer for four years, and has had 80 stories published in magazines and books; most of them have been reprinted, some as many as a dozen items. He is the author of 19 books and the editor of seven; his master's thesis about SF was serialized in a pulp magazine. Four of his stories were dramatized over NBC radio, on ("The Cave of Night") was dramatized on television's Desilu Playhouse in 1959, and The Immortals was dramatized as an ABC-TV "Movie of the Week" in 1969 and became an hour-long series, "The Immortal," in 1970. His stories and books have been reprinted in Australia, England, France, Germany, Greece, Hungary, Italy, Japan, the Netherlands, Poland, Romania, Scandinavia, South America, Spain, the U.S.S.R., and Yugoslavia.

Mary Ann Nowell

Currently the Director of Library and Research Services for the White House, Mary Ann Nowell began her library career with the Department of the Army and has served as a community librarian in Heidelberg and Giessen, Germany, and as a cataloger at the U.S. Army Command and General Staff College, Fort Leavenworth, Kansas. She has been a U.S. Government Documents Librarian, has taught cataloging at Kansas State College, and from 1973-1980, served as a medical librarian with the U.S. Department of Veterans Affairs. From 1980-1989, Mrs. Nowell was Field Services Coordinator, U.S. Army Europe, Library Program, Heidelberg, Germany. Upon returning from Germany, Mrs. Nowell was the Director of the Army/Air Force Joint Medical Library, Office of The Surgeon General until moving to U.S. Army Material command in 1991 where she served as Command Librarian through January 1995.

Mrs. Nowell has authored several publications, and has delivered presentations on library service issues before professional groups including The Army Library Institute, Special Libraries Association, and The Medical Library Association. She has held a variety of positions in professional organizations including President, Heart of America Chapter, Special Libraries Association. In 1989 and again in 1995, the Department of the Army presented her with The Commander's Award for Exceptional Civilian Service.

She holds a Bachelor of Arts in Physics from The College of New Rochelle, New Rochelle, New York, and a Master of Science in Library Science from Drexel University, Philadelphia.

Rodler F. (Rick) Morris

Rick Morris is the Command Historian, U.S. Army Combined Arms Center (USACAC), and Program Manager, Army Knowledge Network (AKN). On 1 October 1994, Rick founded the Combat Training Center Warrior Information Network (CTC WIN) on behalf of the Center for Army Lessons Learned.

Rick received his B.A. from the Virginia Military Institute (with a reserve commission as an infantry officer), and his M.A. and Ph.D. in modern European history and the history of science from the University of North Carolina (UNC), Chapel Hill. During 1976-1987, he taught European and American History at Elon College, Hillsdale College, and UNC, Chapel Hill as an Assistant and Associate Professor. His publications include books, articles and papers on Nazi Germany, the post-Vietnam U.S. Army, late 20th-Century military affairs, and the use of automation to support military operations, plans, education and training.

In 1987, Morris left college teaching for the position of Assistant CAC Historian for Combined Arms Training at Fort Leavenworth. After a year's sabbatical as Visiting Associate Professor for Modern German History at UNC, Chapel Hill (1990-91), the Army promoted him to Command Historian, USACAC. In 1991-95, he developed and fielded the pilot AHAS, AKN, and CTC WIN programs at the direction of the TRADOC Commander.

John Reichley

John Reichley (Rich-lee) is an Alabama native who spent 20 years as an active duty cavalry officer before retiring in 1983. Since 1984 he has been a civilian educator at the U.S. Army Command and General Staff College at Fort Leavenworth.

He has long been interested in military history and is a Fellow in the Company of Military Historians, and has been a member of the executive board of the Fort Leavenworth Historical Society since 1979. He is also a member of the Medal of Honor Historical Society.

In 1988, General Gordon Sullivan, former Army Chief of Staff, awarded him the Silver Order of St. George from the Armor Association for his long service to the cavalry and armor branches of the Army.

John came to the fort with an MBA. He became the first staff and faculty member to receive a master's degree, in journalism from the University of Kansas through the Command and General Staff College cooperative degree program. In 1992, he became the first CGSC staff and faculty member to receive a master's in education from Kansas State University through a new faculty program.

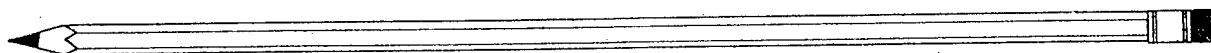
He has been a member of the Fort Leavenworth Speakers' Bureau since 1978 and a VIP tour guide of the post since 1979. He is the CGSC member on the post committee that names buildings and streets after distinguished soldiers.

In addition, he has written hundreds of articles and one booklet, generally on military history, and since 1985, he has written a popular twice-weekly column for the Leavenworth Times.

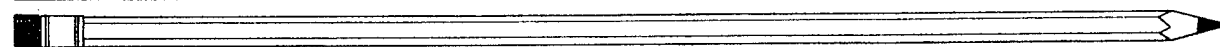
Charlotte N. Douglass

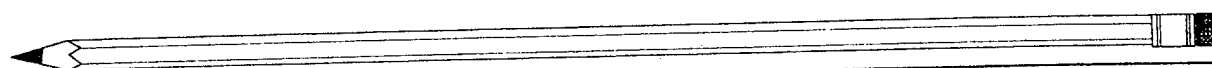
Ms. Douglass is Principal Legal Advisor to the general counsel of the U.S. copyright office, having recently completed a detail as a Policy Planning Advisor to the Register of Copyrights. Charlotte was previously in the Examining Division, as supervisory Copyright Examiner, and prior to that was Attorney for the Performing Arts Section in that same division. She has recently served tours of duty as the Acting Head of the Law Library Reading Room, and Acting Assistant General Counsel for Copyright.

Ms. Douglass received her J.D. from the National Law Center, George Washington University, and holds a graduate degree in music from the University of Michigan. She is a member of the Pennsylvania, Texas, and D.C. Bar Associations and is active in the National Bar Association and the Federal Bar Association, having served formally as Chairperson of the Information, Communications and the Law Section.



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